ASSESSMENT ON OUTCOME OF PAPAYA FRUIT ON PREMENSTRUAL TENSION SYNDROME AMONG ADOLESCENT GIRLS IN SELECTED SETTING

DISSERTATION SUBMITTED TO

THE TAMIL NADU DR.M.G.R.MEDICAL UNIVERSITY

CHENNAI

IN PARTIAL FULFILMENT OF REQUIREMENT FOR THE AWARD OF

DEGREE OF

MASTER OF SCIENCE IN NURSING

APRIL, 2012

A STUDY TO ASSESS THE OUTCOME OF PAPAYA FRUIT ON PREMENSTRUAL TENSION SYNDROME AMONG ADOLESCENT GIRLS IN SELECTED SETTING

Certified that this is the bonafide work of

R.LEELAVATHY
VEL R.S. MEDICAL COLLEGE – COLLEGE OF NURSING,
NO.42, AVADI - ALAMATHI ROAD,
CHENNAI - 600 062

COLLEGE SEAL

SIGNATURE: _____

M.ANURADHA, (Professor)
R.N., R.M., M.Sc. (N),
Principal,
Vel R.S. Medical College - College of Nursing,
No.42, Avadi - Alamathi Road,
Chennai – 600 062, Tamil Nadu.

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Approved by Dissertation Committee in December, 2010

PROFESSOR IN NURSING RESEARCH
M.ANURADHA, _____
R.N., R.M., M.Sc. (N),
Principal,
Vel R.S. Medical College - College of Nursing,
No.42, Avadi - Alamathi Road,
Chennai – 600 062, Tamil Nadu.

CLINICAL SPECIALITY EXPERT
S.P.VASHUMATHI, _____
R.N., R.M., M.Sc. (N),
Reader, Maternity Nursing Department,
Vel R.S. Medical College - College of Nursing,
No.42, Avadi - Alamathi Road,
Chennai – 600 062, Tamil Nadu.

MEDICAL EXPERT

DHANALAKSHMI, _____
MBBS, DGO,
Obstetrician Gynecologist,
Shenoy Nagar Health Post,
Aminjikarai, Chennai-600 034

Dissertation Submitted to

THE TAMIL NADU DR.M.G.R.MEDICAL UNIVERSITY

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ACKNOWLEDGMENT

I owe my success to **almighty god** who blessed me with the necessary will power, strength, courage and health throughout this endeavor.

I wish to express my gratitude to the **Founder, Chairman R.Rangarajan, Vice - Chairman, Sakunthala Rangarajan, Managing Director** and **Trustees** of Vel Group of Educational Institutions, whose dynamic personality and charisma was an inspiration to many of us throughout our course in this esteemed institution.

"Behind every author there is a great inspiration". This Chinese saying is aptly fulfilled by **M.Anuradha, R.N, R.M., M.Sc (N), professor** and **principal** who was a great inspiration for me throughout my study. Her attention to detail and quest for perfection reflected by her vast experience and was instrumental in making my study a fine success. I owe my profound gratitude and sincere thanks to our most respected Principal.

I like to express my heartfelt gratitude to **K. SudhaDevi, R.N, R.M., M.Sc (N).,** Vice Principal, HOD of Medical Surgical Nursing department for her immense support from the initial period of my study.

I would like to take this opportunity to convey my sincere thanks and heartfelt gratitude to **S.P.Vashumathi, R.N, R.M., M.Sc.(N).,** Reader, Head of Department of Maternity health Nursing who has guided me as a good mentor and her immense support was instrumental in completion of my study.

I thank **G.Karpagavalli, R.N, R.M., M.Sc (N),** Lecturer, Vel R.S.Medical College-College of Nursing for her guidance and continuous support throughout my study.

I thank **R.Arokia Sophi, R.N, R.M., M.Sc (N),** Lecturers, Vel R.S.Medical College-College of Nursing for her guidance and continuous support throughout my study.

I thank **Bandla Latha**, **R.N, R.M., M.Sc (N),** Lecturers, Vel R.S.Medical College-College of Nursing for her guidance and continuous support throughout my study.

I extend my thanks to the maternity health nursing experts, for their valuable guidance, constructive criticism in completing this study successfully.

My sincere thanks to **Dhanalakshmi**, **M.B.B.S., DGO** for validating the tool of my study.

I would like to thank **P.Krishnamoorthy,** registered dietician of Vijaya Hospital for their guidance and support extended towards the success of the study.

I extend my thanks to all the librarians of **Vel.R.S.Medical College –college of nursing** and **The Tamilnadu Dr.M.G.R Medical University** to complete this study successfully.

I take this opportunity to thank **Thenarasu**, Biostatistician, Shankara Nethralaya Hospitals, Chennai for his assistance in statistical analysis and presentation of data.

My deep gratitude to **G.K.Venkataraman**, Elite Computers, Avadi for his immense patients and skills in completing the dissertation.

I would like to convey my thanks **S.Muthuvappa, M.Com, M.Ed.,** and **V.Arputham, M.A., M.Ed.,** for their immense help in English and Tamil editing for my study.

I would like to thank the entire **M.Sc (N) faculty members** of **Vel.R.S. Medical College-College of Nursing** for their suggestions and guidance.

I take this opportunity to thank all my **teaching** and **non-teaching staff members**, **librarians** and **office staff members** of Vel R.S Medical College – College of nursing for their co-operation and help rendered.

It would be a lapse on my part if I fail to thank my brother, **R.Hiemesh Babu, M.B.B.S** and my **parents** and my **friends** for their indescribable support in every aspect of this whole study without whose constant guidance, spiritual support, encouragement and well wishes, the successful completion of this study would have not been possible.

Last but not the least I would like to express my thanks to the **study participants** for their co-operation and participation, without whom this study would have been impossible.

(R.LEELAVATHY)

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ABSTRACT

Premenstrual syndrome is medically defined as distressing physical and psychological symptoms not caused by organic disease which appear before menstruation regress during the menstruation, perhaps a hormone imbalance, due to lack of progesterone, a poor diet and lack of exercise. Premenstrual tension syndrome is the emotional tension, insomnia, depression, irritability associated with the premenstrual week. Somatic sensations associated with the syndrome are bloating, cramping, tenderness of the breasts, swelling of hands and feet, temporary weight gain. Premenstrual disorder is a condition in which the symptoms of premenstrual syndrome are more severe and cause significant functional impairment .It has been estimated that anywhere from 3 to 9% of women suffer from this disorder (Woods, 2005).

In premenstrual syndrome, symptoms can be controlled to some extent by the dietary manipulations. Studies suggest that a diet high in vitamin C, calcium and magnesium was helpful in order to reduce the level of premenstrual tension syndrome. It is advisable to take diet consisting of fruits which is rich in calcium, antioxidant, vitamin A and minerals from one week prior to menstruation. Papaya fruit is an excellent source of dietary fibre, folate, vitamin A, C and E.It also contains small amount of calcium, iron, riboflavin, thiamine and niacin. It is also very rich in antioxidant nutrients flavanoids and carotenes, very high in vitamin A and C & and also low in calorie.

Premenstrual syndrome is linked to other disorders associated with inadequate calcium, iron, vitamins and minerals. Hence the researcher was interested to reduce the level of premenstrual tension syndrome by providing papaya fruit for adolescent girls. The aim of the study was to determine the outcome of papaya fruit on premenstrual tension syndrome among adolescent girls in selected setting. A Quasi experimental design was adopted. The study was conducted at selected government school, Arakonam.60 adolescent girls were selected.30 in experimental and 30 in control group. Adolescent girls

who fulfilled the inclusion criteria were selected by using non probability purposive sampling technique.

The demographic variables were age in years, age at menarche, weight in kilogram, body mass index and type of diet. The pretest and posttest level of PMTS was determined by modified premenstrual tension syndrome scale.75 mg of papaya fruit was provided by the researcher from the 5^{th} day of last menstrual period in mid morning for 21 days. Data analysis was done by using descriptive and inferential statistics. The pretest and posttest level of premenstrual tension syndrome were compared and found that in pretest 6(20%)had mild level of premenstrual tension syndrome,24(80%)had moderate level of premenstrual tension syndrome ,none of them comes under severe level of premenstrual tension syndrome and in post test 27(90%) had mild level of premenstrual tension syndrome,3(10%) had moderate level of premenstrual tension syndrome, none of them comes under the severe level of premenstrual tension syndrome.

Thus the study concludes that papaya fruit was effective to reduce the level of premenstrual tension syndrome. The conceptual framework was based on modified Weidenbach's helping art nursing theory. The research hypothesis formulated for the study was "there is a significant relationship between the premenstrual tension syndrome and papaya fruit" .The outcome was proved in comparing the pretest and post test level of premenstrual tension syndrome where the result showed $p<0.05$ level of significance. Thus the research hypothesis was accepted. It was also found that papaya fruit have a role in reducing PMTS. This is statistically proved that research hypothesis was accepted as papaya fruit was effective to alleviate PMTS.

CHAPTER – I

INTRODUCTION

"The menses in sensitive women is almost always attended by
Mental uneasiness, irritability and sadness"

Rvbinao and Schmidt, 1995

The concept of women's health has a wider horizon. The health of women actually represents the health of the country she comes from. Women are the primary care takers, first educators and nurtures of the next generations. They are the nucleus of our society. Our destiny lies with the well being of women's health. It is the comprehensive or total health care that can be offered to women. The onset of menstruation signifies that a girl has stepped across a biological threshold into puberty. For some women, menstruation is merely an inconvenience. Others really dread during that time. The later are usually women who are plagued by premenstrual syndrome. This syndrome was first recognized and given this name in 1931.There was official recognition of symptoms that has plagued women for centuries (Boback, 1993).

"Adolescence" refers to the period from puberty to maturity which physical, emotional and psychological changes occur in a boy or girl (Alkha Dhal, 1995).The prime factor which contributes to happiness in life is "Good Health" (Elizabeth Hurlock). Menstruation is a normal physiological impact in each girl's life. Menstruation is monthly uterine bleeding for 3-5 days after every 28 days from puberty to menopause .A change in mood, behavioral appearance of some abnormal vague symptoms is often noticed in second half of the cycle of a women or require medical help, called premenstrual syndrome.Atleast one of the following somatic affected symptoms appears 5 days before menses or prior menstrual cycle. The affected symptoms are depression, anger outburst, irritability, anxiety, confusion and social withdrawals. While in somatic symptoms, there are breast tenderness, abdominal bloating and headache. These symptoms relieved within 4 days of the onset of menses (Varney, 2005).

One of the most difficult deviations from a healthy state to accurately identify in a woman is a collection of symptoms known as premenstrual syndrome. Physical,

psychological and behavioral cyclic changes occur in almost all women at sometimes between menarche and menopause. It has been estimated that up to 75 percent of women will experience symptoms of premenstrual tension syndrome sometimes in their adult life and 20 to 40 percent will seek medical help for this (Navdeep kaur, 2009).

Premenstrual syndrome is medically defined as distressing physical and psychological symptoms not caused by organic disease which appear before menstruation regress during the menstruation, perhaps a hormone imbalance, due to lack of progesterone, a poor diet and lack of exercise. Premenstrual disorder is a condition in which the symptoms of premenstrual syndrome are more severe and cause significant functional impairment. It has been estimated that anywhere from 3 to 9 percent of women suffer from this disorder (Woods, 2005). Pre-menstrual syndromes (PMS) are a group of menstrual related, chronic, cyclical disorders manifested by emotional and physical symptoms in the second part of the menstrual cycle, which subside after the beginning of the menstrual period.

Many doctors do not believe there is such condition as premenstrual tension syndrome and, consequently, fail to recognize and treat it. Of 482 women who called the National Association for premenstrual syndrome (NAPS) helpline last year, 42 percentages said that their GPs were unsympathetic or did not seem to know much about premenstrual tension syndrome.

Over the last 60 years, research has been directed towards establishing the causes and generating effective treatments for premenstrual tension syndrome. The lack of agreement about premenstrual problems as a syndrome, and its diagnosis has contributed greatly to GP's disbelief. Its recognition is a twentieth century event, reflecting changes in our social structure and lifestyle. In the past the time between puberty and the menopause was filled with many pregnancies when premenstrual syndrome disappears. Each was followed by the cessation of ovulation caused by prolonged breastfeeding. Nowadays with fewer pregnancies the effects of the menstrual cycle are more apparent**.**

BACKGROUND OF THE STUDY

Premenstrual syndrome is a collection of physical, psychological and emotional symptoms related to a woman while most women (about 80 percent) of child bearing age have some symptoms of premenstrual syndrome, among them which are 30 to 40 percentages. Women suffer some impairment of daily activities of 75 percent. Women have some symptoms, 3 to 8 percent have severe PMS.PMS can occur before, during and after menstruation, as in the most several cases some of the symptoms are present. The reason the symptoms can appear all through the month is that each problem has a knock on effect with the next; because of those suffering from severe PMS can become crippled with anxiety and depression as they struggle to feel well each month.

During the reproductive years , up to the 80- 90 percent of menstruating women will experience symptoms (breast pain, bloating, acne, constipation)that forewarn them of impending menstruation ,so called premenstrual moliminia.Over 60 percent of women report swelling or bloating although objective documentation of weight gain is lacking in most of these women , cyclic breast symptoms affect 70 percent of women with 22 percent reporting moderate to extreme discomfort .Available data suggest that as many as 30 to 40 percent of the women are sufficiently bothered by premenstrual syndrome to seek relief.

The first ‘modern’ account of premenstrual tension (PMT) was published in a medical journal in 1931.Feelings of “tension”; self depression and even severe depression experienced by women in the 7 to 10 days preceding menstruation were accurately described. By the 1950’s ,the list of symptoms reported by women in the premenstrual period has increased and there was a growing realization that so called “tension” was just one aspect of the problems .In a paper published in 1953 the term “premenstrual syndrome” was introduced to encompass the extending list of symptoms. The name eventually stuck, and the problem is now often referred to as premenstrual syndrome.

The reported prevalence of premenstrual syndrome about 20 to 40 percent shows that a significant group of women may be affected by premenstrual syndrome (LOGUE AND MOOS,1986) .Reports of premenstrual syndrome among adolescents in western countries indicate a prevalence ranging from 14 to 30 percent (HARGROVE AND ABRAHAM 1982 ,RAJA ET AL 1992) .Some of the premenstrual symptoms may create

serious negative consequences for the adolescents ,their families and their social relationship, including low self esteem, low tolerance to stress and feelings of inadequacy.

In Brazil, studies in clinics have shown premenstrual syndrome prevalence between 8 percent and 86 percent, depending on the severity of the symptoms considered. In a study carried out in a gynecology outpatient clinic, the premenstrual symptoms reported among women with the severe form of premenstrual syndrome (43.3 percent) were; irritability (86 percent), tiredness (71 percent), depression (62 percent) and headache (62 percent). 95 percent presented more than one symptom and 76 presented an association between physical and psychological symptoms. Approximately 40 percent women report significant problems related to their cycles and about 2 to 10 percent report a degree of impact on work or lifestyle .Up to 90 percent of women experience some degree of premenstrual symptoms. The higher incidence is found in women between the age of 15 and 35 years.

In premenstrual syndrome, symptoms can be controlled to some extent by the dietary manipulations. Studies suggest that a diet high in vitamin C, calcium and magnesium helpful. Fruits will help patients of premenstrual syndrome to encounter premenstrual depression, lethargy and even water retention which are characterized by a bloating, breast tenderness and swelling of fingers, toes and face. Many women try to combat the symptoms of premenstrual syndrome with the counter pain remedies. But a new study says that a natural alternative, papaya fruit may be the best answer.

The weight gain during this period is about one kilogram or more .It will be over with menstruation and they return back to their normal weight .It is advisable to take diet consisting of fruits which is rich in calcium, antioxidant, vitamin A and minerals from one week prior to menstruation. Papaya fruit is an excellent source of dietary fibre, folate, vitamin A, C and E.It also contains small amount of calcium, iron, riboflavin, thiamine and niacin. It is also very rich in antioxidant nutrients flavanoids and carotenes, very high in vitamin A and C & and also low in calories and sodium.

Duvan CI et al (2011), conducted a study to determine status of antioxidant in papaya fruit on premenstrual tension syndrome. An experimental study was done among women with premenstrual symptoms. Sample size is 200.Participants was assessed by

premenstrual assessment form. Results showed that antioxidant level was increased and adequate to treat the premenstrual symptoms**.**

Turk J Biol et al (2010), conducted a study to determine the effectiveness of papaya fruit on premenstrual tension syndrome in turkey. An experimental study was done among adolescent girls by using randomized technique. Screening was done based on premenstrual symptoms. Treatment includes supplementation of papaya juice 100 gm for three months. Results showed that level of premenstrual tension syndrome was decreased. Thus concluded that the papaya has an effect on premenstrual tension syndrome.

SIGNIFICANCE AND NEED FOR THE STUDY

Premenstrual syndrome is the cyclic occurrence of distressing somatic and affective symptoms along with behavioral changes that results in the deterioration of interpersonal relationship and personal health and function. A women's experience of premenstrual symptoms has been found to reduce work efficiency, increase absenteeism and negatively impact family and personal relationship (Woods, 2005).

Premenstrual syndrome is more frequently encountered in middle aged women. It is important for two reasons, firstly because the symptoms of premenstrual syndrome are responsible for socio economic loss and secondly because of associated legal and women's rights issues that have arisen in conjunction with personal accountability during the luteal period (Daftary, 2008). Premenstrual tension syndrome is increasingly recognized as medical entities that adversely affect the quality of life of the subset of women. Significant advances are made in the treatment for premenstrual syndrome.

Premenstrual syndrome could stand for "please make it stop" because of pain, fatigue and emotional distress. It causes nearly 75 percent of menstruating women, it can be unbearable. Premenstrual syndrome is a distinct and separate entity from dysmenorrhea. The term premenstrual syndrome is used to describe an array of predictable physical and affective symptoms that occur cyclically during the luteal phase of the menstrual cycle and resolve quickly at or near the onset of menstruation. The etiology of premenstrual syndrome is unknown, and it is relatively a common disorder during adolescence.PMS is characterized by symptoms of abdominal pain abdominal bloating, tension, headache, pelvic discomfort, fatigue, food cravings, irritability and anxiety.

Although true PMS begins 7 to 10 days before menses and cease with the onset of bleeding, it is characteristic for adolescent girls to experience symptoms at the time of menses.

One of the theories for explaining the physiological mechanism of premenstrual syndrome is that the endocrine, reproductive and serotonergic systems converge to regulate the individual's behavior. The oscillations in estrogen and progesterone levels during the menstrual cycle act on serotonergic function such that premenstrual syndrome is manifestated women are who are more sensitive to this.

Population studies have shown different prevalence of premenstrual syndrome ,ranging from 5 to 35 percent according to the criteria utilized and the place where the study was conducted .Higher prevalence are found when the diagnostic criteria are less rigid and include women who report fair or more symptoms .In one population based study carried out in Virginia (USA),premenstrual syndrome was observed in 8.3 percent of the women interviewed by telephone.However,there is concordance regarding the fact that approximately in 5 percent of women present severe symptoms ,and such symptoms are known as premenstrual dysphonic disorder(PMDD).

Premenstrual syndrome affects millions of women during their reproductive age. In the past 30 years PMS emerged as well recognized phenomenon for which effective treatment is available. The desire for safe and effective non drug alternatives has prompted many women to consider the use of dietary supplements for premenstrual syndrome. Various biosocial and psychological causes have been proposed as the cause of the syndrome, including abnormal serotonin function, presence of progesterone, altered endorphin modulation of gonadotrophin secretion, exercise habits, smoking, use of alcohol, altered transcapillary fluid balance and a diet rich in beef or caffeine containing beverages. The PMS is particularly common in the younger age groups and, therefore represents a significant public health problem in young girls. Premenstrual syndrome is linked to other disorders associated with inadequate calcium, iron, vitamins and minerals. Hence the researcher has selected this topic to conduct the study by providing dietary supplement during premenstrual period.

TITLE

Outcome of papaya fruit on premenstrual tension syndrome among adolescent girls.

STATEMENT OF THE PROBLEM

A study to assess the outcome of papaya fruit on premenstrual tension syndrome among adolescent girls in selected setting, 2011 – 2012.

OBJECTIVES

1. To assess the pre-test level of premenstrual tension syndrome among adolescent girls in experimental and control group.
2. To assess the post- test level of premenstrual tension syndrome among adolescent girls in experimental group and control group.
3. To determine the outcome of papaya fruit in experimental and control group.
4. To associate the post assessment level of premenstrual tension syndrome with the demographic variables in experimental group.

VARIABLES

Independent Variable

Papaya fruit

Dependent Variable

Level of Premenstrual tension syndrome

RESEARCH HYPOTHESIS

H_1: There is a significant relationship between the premenstrual tension syndrome and papaya fruit.

OPERATIONAL DEFINITION

Outcome

It refers to the level of premenstrual tension syndrome experienced by adolescent girls after providing papaya fruit for 21 days, assessed by modified premenstrual tension syndrome scale.

Papaya fruit

It refers to giving 75 grams of papaya fruit after peeling the skin of it for 21 days from the 5th day of last menstrual period in midmorning.

Premenstrual tension syndrome

It refers to the group of symptoms experienced by adolescent girls prior to menstruation which is characterized by sharp or dull pain due to the contraction of abdominal muscles along with fatigue, breast tenderness, nausea, and vomiting, physical, psychological and behavioral changes.

Adolescent girls

Girls who attained menarche within the age group of 11 to 16 yrs.

ASSUMPTIONS

1. Most of the adolescent girls may have premenstrual tension syndrome.
2. Papaya fruit may have some effect on premenstrual tension syndrome.

DELIMITATIONS

1. The study was delimited to adolescent girls with premenstrual tension syndrome.
2. The study was delimited to period of 4 weeks.

PROJECTED OUTCOME

1. The study would enable the adolescent girls to perform their daily activities and feel comfortable without experiencing premenstrual syndrome.
2. Application of study finding would help to make standard nursing care for adolescent girls with premenstrual syndrome.

SUMMARY

This chapter deals with the background of the study, significance and the need of the study, title and statement of the problem, objectives, variables, research hypothesis, operational definition, assumptions, delimitations and projected outcome.

ORGANIZATION OF THE REPORT

The following chapter contains

Chapter-II : Review of literature and conceptual framework.

Chapter-III : Research methodology.

Chapter IV : Data analysis and interpretation

Chapter V : Discussion.

Chapter VI : Summary, nursing implication, recommendation and limitation of the study.

This is followed by references and appendices.

CHAPTER – II

REVIEW OF LITERATURE

Review of literature is a written summary of the state of existing knowledge on a research problem. The task of reviewing research literature involves the identification, selection of a critical analysis and written description of existing information on a topic.

Review of literature is an essential step in the research project. It provides basis for future investigations justifies the need for study, throws light on the feasibility of the study.

Review of literature for the present study is classified under the following headings.

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PART – I Literature review

Section A : General information related to premenstrual tension syndrome.

Section B : General information related to papaya fruit.

Section C : Studies related to premenstrual tension syndrome.

Section D : Studies related to papaya fruit

Section E : Studies related to dietary management (fruits) on premenstrual tension syndrome

PART - II Conceptual framework

PART – I

SECTION A

General information related to premenstrual tension syndrome

The terms premenstrual syndrome (PMS) and premenstrual tension (PMT) are interchangeable. Around 90 percent of menstruating women get advance warning of an approaching period because of physical and/or psychological changes in the days before their period begins. For most women the symptoms are mild, but a small proportion finds their symptoms so severe they dread this time of the month.

The terms ‘mild’ and ‘severe’ in respect of PMS are arbitrary, but relate to the extent of disruption to your home and work life that's attributable to the monthly cycle. About one third of women say PMS significantly affects their life, with 5 to 10 percent classifying their PMS as severe. For some women, the days before the start of their period can be awful. There are more than 100 recognized symptoms that may be due to PMS. Fortunately, most women experience only a handful of problems. The most common symptoms are listed below.

Psychological

- Irritability.
- Mood swings.
- Losing your temper easily.
- Loss of confidence.
- Crying for no particular reason.
- Aggression.
- Poor concentration.
- Tiredness.

Physical

- Breast tenderness.
- Abdominal swelling or bloating.
- Weight gain.
- Swollen ankles.
- Headache and possibly migraine.

Normal fluctuations in hormone levels are responsible for some of the symptoms most commonly associated with the monthly cycle such as bloating, breast tenderness or headache.

Women who suffer from PMS may possibly have a lower than normal level of a certain chemical in their brain (serotonin), which may explain some of the non-physical symptoms such as irritability, depression and mood swings.

Part of the reason few PMS treatments provide long-term relief is the so-called 'placebo effect'. A placebo is a treatment that is ineffective (e.g. a dummy tablet) but has the psychological effect of making you feel better. To demonstrate a treatment is better than a placebo requires careful scientific study. Vitamin B6 is commonly recommended for mood swings and irritability. Capsules of evening prime rose oil can be helpful in alleviating premenstrual breast pain in some women.

Bromocriptine (e.g. Parlodel) and cabergoline (Dostinex) reduce the output from the brain of a hormone called prolactin. Prolactin is the hormone that stimulates the breasts to produce milk. These drugs may be useful if premenstrual breast pain is a major symptom, but their long-term use should be avoided. Diuretics (water tablets) may give relief from ankle swelling. They will not relieve abdominal bloating, which is not caused by fluid retention but by relaxation and distension of the muscle in the wall of the bowel.

Antidepressants are much enthusiasm for the use of a class of antidepressants called SSRIs (e.g. Prozac) in the treatment of severe PMS where the symptoms are mostly depression, mood swings, irritability, etc. The results of treatment are often dramatic and are supported by scientific studies. Side effects can sometimes be a problem.

A group of hormones taken for 10 to 14 days before the beginning of the period. Progestogens are widely prescribed and have relatively few side effects. It was once thought that PMS was due to a lack of progestogen in the bloodstream, but it is now recognized this isn't the case. There is no good evidence that the Pill works in PMS, but it is often prescribed, especially if contraception is required. Some women find the COC gives them PMS because of the hormones contained in the pill. There is some initial evidence to suggest the combined Pill called Yasmin, which contains a novel progestogen, may be of some benefit to women with PMS. However, more data is needed.

Danazol (e.g. Danol) is a synthetic hormone based on the male hormone testosterone. Its use in PMS is supported by scientific studies. Extra estrogen (one of the female hormones) via patches or implants can suppress ovulation and reduce the naturally occurring hormone fluctuations. .

Mirena is in fact a contraceptive device, which is placed inside the uterus (womb). It releases a small dose of progestogen hormone into the body. Most women experience a reduction in the heaviness and duration of their periods and some say it improves their PMS. It may be combined with an estrogen patch or implant.

Proper nutrition, regular exercise, and a healthy lifestyle generally help with PMS. Cutting back on sugar, coffee, and alcohol may provide some relief from symptoms. Taking supplements containing calcium, magnesium, soy, vitamin B6, and vitamin E may reduce certain symptoms. Till date, among these supplements, calcium has the most convincing evidence. Some women use certain herbal products such as evening primrose oil, St. John's wart, and chaste berry to decrease their symptoms; however, the effectiveness of such products is not known. Fruits as grapes, guava, papaya, mango and agnus castus have an effect in reducing premenstrual tension syndrome. In this regard, a number of clinical studies have shown that certain nutrition and supplementation interventions can be effective in management.

SECTION B

General information related to papaya fruit

Papaya, paw paw, papaw, tree melon (Botanical name- Carica papaya), it has oblong shape, normally greenish yellow, yellow or orange colour. It is large tree plant fruit usually reaching 2.5 kg. It has bitter sweet taste .It comes from tropical places with higher humidity, native to Mexico ,countries of central America, Thailand ,Africa, Asia and growing well in Australia.

Papaya fruit is an excellent source of dietary fibre, folate, vitamin A, C and E.It also contains small amount of calcium, iron, riboflavin, thiamine and niacin. It is also very rich in antioxidant nutrients flavanoids and carotenes, very high in vitamin C &A and low in calories& sodium. Eating pawpaw after a meal makes for better digestion prevents bloating and chronic indigestion. It can lower the inflammation in the body, alleviates the pain and edema caused by sports injuries. Because of its anti inflammatory properties papaya can relieve the severity of Rheumatoid arthritis and Osteoarthritis. Because of its high antioxidant content, papaya can prevent cholesterol oxidation and can be used in preventive treatments against atherosclerosis, strokes, heart attacks and diabetic heart disease.

The healing properties of papaya fruit are

1. Increases quality of proteins in whole organism.
2. Revitalize the human body and maintain energy and vitality.
3. Encourages the renewal of muscle tissue.
4. Supports cardiovascular system.
5. Boosts up the immune system.
6. Helps with the digestive system, by breaking down the proteins and supporting production of digestive enzymes.
7. Papaya used externally as treatments for skin wounds .Prevents the cataract formation.
8. Due to high vitamin A, it lowers the risk of emphysema in smokers and passive smokers.
9. Alleviates inflammation.
10. It helps with the nausea and vomiting.
11. Used to treat the menstrual disorders,
12. It can benefit the people suffering colon cancer and other forms of cancers and ailments of cardiovascular and gastrointestinal systems

Results from the studies on carica papaya parts, extracts, and isolated compounds are used as antimicrobial, parasitic, sedative, muscle relaxer and purgative.

Nutritive value of papaya fruit

1. Energy- 32 kcal
2. Carbohydrate-7.2 gm
3. Protein – 0.6 gm
4. Fat- 0.1 gm
5. Betacarotene-666 microgram
6. Minerals:
   i) Calcium-17 mg
   ii) Phosphorus-13 mg
   iii) Magnesium-11mg
   iv) sodium-6 mg
   v) potassium-69 mg
   vi) sulphur-13 mg

vii) chloride-11 mg

viii) iron-0.5 mg

9. Vitamins:

i) Thiamine-0.04 mg

ii) Riboflavin-0.25 mg

iii) Niacin-0.2 mg

iv) Vitamin C-57 mg

10. oxalic acid-1 mg

11. phytan-4 mg

12. Protein constituents

a) total nitrogen-g/100g=0.1

b) lysine-400 mg per gram nitrogen

c) tryptophan-130 mg per gram nitrogen

d) methionine-30 mg per gram nitrogen

13. Fibre

a) Total dietary fibre-2.6 gm

b) Insoluble dietary fibre-1.3 gm

c) Soluble dietary fibre-1.3 gm

d) Crude fibre-0.8 mg

Nutritional benefits of papaya fruit

1. Rich in vitamin C, beta carotene and magnesium.
2. It promotes direct absorption.
3. Good for all age group.
4. Iron requirement for age group

a) 10 to 12 yrs-19 mg

b) 13 to 15 yrs-28 mg

c) 16 to 18 yrs-30 mg

5. Daily requirement of beta carotene for children is 2400 kcal. But in papaya 666 kcal present.1/4th is getting.
6. Vitamin C-40 mg (144 percent), more than 44 percent is present.
7. It is essential for iron absorption because it converts ferric iron to ferrous iron.
8. Seasonal food
9. Reduces cholesterol
10. Prevents constipation.

Researchers over the past few years suggest that a variety of nutrients may have an important role in the phase related mood and behavioral disturbances of the premenstrual tension syndrome. In addition, there is a scientific evidence, at least for a few of these micronutrients supporting their cyclic fluctuations during the menstrual cycles. In a single fruit, one can get enough nutrients to reduce the level premenstrual tension syndrome.

SECTION C

Studies related to premenstrual tension syndrome

Samia Tabassum et al (2010), had conducted a study to determine the frequency and severity of premenstrual syndrome in young college going girls in Europe. An observational study was conducted among 384 young girls by convenient sampling technique. Data was collected over two cycles by filling a 29 items shortened premenstrual assessment form. The results showed that the frequency of premenstrual syndrome was 53 percent according to ICD -10 criteria among which 42 percent were mild, 18.2 percent were moderate and 31.7 percent were severe. The study concludes that premenstrual syndrome is a common problem in young girls.

Shymala Nada Raja et al (2009), conducted a study to determine the prevalence and Correlates of the Premenstrual Syndrome in adolescence. A longitudinal study was conducted among 15-year-old females reported their experience of symptoms indicative of premenstrual syndrome (PMS) in New Zealand. The sample size was 384. Preadolescent self-report and maternal ratings of physical and mental health did not significantly predict adolescent PMS. The results suggest that the experience of PMS in adolescence may be mediated by perceived health status. The study concludes that the roles of mental health and maternal influence in the development of adolescent PMS may be minimal.

Avril M. Houston et al (2006), conducted a study to evaluate Knowledge, Attitudes, and Consequences of Menstrual Health in Urban Adolescent Females. A 35-item, survey was administered to post menarcheal adolescent's ages 12–21 years. Descriptive analysis of the prevalence of the menstrual disorders was completed. Results showed that 91.5 percent of the respondents were African-American. Premenstrual syndrome (PMS) was the most prevalent reported menstrual disorder (84.3 percent) followed by dysmenorrhea (65 percent), abnormal cycle lengths (13.2 percent), and excessive uterine bleeding (8.6 percent). Only 2 percent of teens report receiving

information about menstruation from their health care provider. Negative expectations regarding menstruation were associated with higher rates of school absenteeism and missed activities (P = 0.0790 and P = 0.0297 respectively).The study concludes that PMS and dysmenorrhea are prevalent medical disorders among urban adolescents.

Michelle Vichnin et al (2006), conducted a study to determine the severity and impairment of PMS in adolescent girls. The study was conducted among adolescents aged of 13–18 years who completed a symptom questionnaire, functional impairment ratings, and a brief medical history questionnaire during an office visit in USA. The results showed that study participants (n = 94) had a mean age of 16.5 years (±1.3 SD); 31% met the criteria for the PMS group, 54 percent said they had PMS but did not meet criteria, and 15 percent clearly had no PMS. The study concludes that the reports of premenstrual symptoms, their severity, timing and impairment suggest that PMS is common in adolescents.

Lee L K et al (2006), conducted a study to determine the menstrual characteristics of adolescent females and factors associated with it. A cross-sectional descriptive study carried out on 2,411 secondary school adolescent females in Nigeria Sembilan, Malaysia. Data were collected using a self-administered structured questionnaire on menstruation in Bahasa Malaysia. Results showed that abnormal cycle length (menstrual cycle longer than 35 days or cycle length between 14 to 20 days or irregular pattern) was common and affected 37.2 percent of subjects. The majority (74.6 percent) experienced premenstrual syndrome and 69.4 percent had dysmenorrheal .The study concludes that_menstrual problems among adolescent female are common.

Nour Mohammed Bakshani et al (2005), conducted a study to determine the prevalence and severity of premenstrual syndrome among Iranian female university students. A cross sectional study was carried among female students aged 18 – 27 years. The sample size was 300.Participants was screened by question assessing premenstrual syndrome. The results showed that 98.2 percent reported atleast one mild to severe premenstrual syndrome and 16 percent met the criteria of DSM-IV for premenstrual syndrome. The study concludes that high frequency of premenstrual syndrome and significant prevalence of premenstrual syndrome was found.

Carol A. Wilson et al (2005), conducted a survey of adolescent dysmenorrhea and premenstrual symptom frequency- a model program for prevention, detection and treatment. Eighty-eight female high school adolescents in two separate physical education classes were surveyed for the prevalence of dysmenorrhea and premenstrual symptoms. Each group answered a questionnaire requesting age, presence, severity, and nature of dysmenorrhea and premenstrual symptoms; and course of treatment. The results showed the majority of the female adolescents identified dysmenorrheal and premenstrual symptoms as problems that significantly affected their academic, performance and were responsible for school absenteeism. The study concludes to design a model for use by health professionals to educate girls in self-help methods and to screen for and detect these problems.

Carol A. Wilson et al (2005), conducted a comparative study to evaluate the Firstborn adolescent daughters and their mothers with and without premenstrual syndrome (PMS) for two menstrual cycles in order to compare menstrual, postmenstrual (follicular), and premenstrual (luteal) symptomatology. Participants were screened by Premenstrual Assessment Form (PAF) and the Utah ad conducted a study to determine the frequency, severity and period of appearance of the more important somatic and psychological symptoms characteristic of adolescents with PMS. The study includes 186 girls at an age between 16 and 18 years monitored for the period of one year and four months. The most frequently met somatic symptom is headache (39 percent), the most frequent psychological one--irritability (46 percent). Sufficient attention is paid to the influence of the menarche and cigarette smoking in adolescents with PMS.

Orhan Derman et al (2004), had conducted a study to investigate the frequency of premenstrual syndrome (PMS) associated symptoms and effects of nutrition on PMS in adolescent girls. One hundred and seventy-one adolescent girls who had menstrual cycles were included in this study. Participants were screened by a questionnaire on criteria for PMS, dysmenorrhea and regularity of menstrual cycle. The results showed that one hundred and five adolescent girls out of 171 (61.4 percent) met DSM-IV criteria for PMS. These study concludes that PMS and dysmenorrheal are frequently overlapping and found that PMS is associated with dietary habits.

Douglas. S et al (2000), conducted a study to evaluate the strength of evidence for treatment for PMS .The study was conducted at Cochrane library .The design used for the study was a case control study. Participants were a subset of women aged 27 to 44 years. 1057 women who developed PMS over 10 years of follow up and 1968 women reporting no diagnosis of PMS. Intake of calcium and vitamin D was measured in 1991, 1995 and 1999 by a food frequency questionnaire .Participants with highest intake (Median,1283 mg/dl) has a lower risk of PMTS of 0.70(95 percent confidence interval).The study concluded that high intake of calcium and vitamin D may reduce the risk of PMTS .

Elissa Koff et al (1999), conducted a study on premenarcheal expectations and post menarcheal experiences of positive and negative menstrual related changes .The study was conducted among changes 80 girls on three occasions: (1) in grade 6 when girls were premenarcheal, (2) at the test occasion within 6 months after each girls' own menarche, and (3) in grade 9 when girls were post menarcheal. Premenarcheal girls rated expectations of changes, and post menarcheal girls rated experiences of changes, for both premenstrual and menstrual phases. Results showed that ratings for positive and negative changes were at similar levels premenarcheal and decreased at menarche. The study conclude that both expectations about, and initial experiences of, menstrual cycle-related changes were associated with longer-term menstrual experiences. The different outcomes for positive and negative changes have implications for menstrual socialization, and provide the basis for some optimism about facilitating a more complex and multidimensional understanding of menstruation.

Freeman et al (1999), had conducted a study to assess the effectiveness of serotonergic antidepressants on PMTS. The study was conducted on 31 patients, randomized double blind study for one month. Participants were screened by questionnaire based on PMS .At the end of the short term treatment, results showed that mood swings, nervous tension, feelings out of control and confusion were significantly lower ($p<0.005$) at one point in the half cycle of closing

Janita P. C. Chau et al (1998), conducted a study to determine the effects of an educational programme on adolescents with premenstrual syndrome .Participants from a sample of 94 schoolgirls aged between 14 and 18 years from four secondary schools in Hong Kong were assigned to either the experimental or control group. Immediately

following the education program, the schoolgirls in the experimental group had significantly increased knowledge scores as measured by the Premenstrual Syndrome Knowledge Questionnaire. Three months following the education program, schoolgirls in the experimental group reported having a significant reduction in total PMS scores and three of the subscale scores as measured by a translated version of Abraham's Menstrual Symptom Questionnaire. The results showed that no significant differences were found for the control group on pre-test and post-test PMS scores suggesting that the education program could have been the source of the reduction in PMS symptoms of the experimental group of young adolescents girls.

Sing BB Berman et al (1996), conducted a study to assess the incidence of premenstrual tension syndrome. The study was conducted among US women ,aged 21 to 64 years .Data collection was done by telephone using random digital dial methods .The survey included demographic information. Questions concerning respondent knowledge of premenstrual tension syndrome and any remedies that were used to control the symptoms .41% of women reported yes to the question , "do you suffer from PMTS" ,42% took either prescription or over the counter medications to relieve them. These findings show that women were aware of symptoms related to premenstrual tension syndrome.

SECTION D

Studies related to papaya fruit

David J Buttle, et al (2011) conducted a study on oral dosing with papaya latex is an effective anthelminthic treatment for sheep infected with haemonchus contortus. In two experiments, sheep were infected concurrently with 5,000 infective larvae of Haemonchus contortus and 10,000 infective larvae of Trichostrongylus colubriformis and were then treated with the supernatant from a suspension of papaya latex from day 28 to day 32 post-infection. The study conclude that cysteine proteinases derived from papaya latex may be developed into novel anthelmintics for the treatment of lumenal stages of gastro-intestinal nematode infections in sheep,

Augustine Ologundudu, et al (2011), conducted a study to determine the Anti-ulcerogenic Activity of Aqueous Extract of Carica Papaya Fruit on Aspirin – induced Ulcer in Rat. The rats were treated with 400 mg kg-1 body weight of aqueous extract of Carica papaya for 7 days after which they were fasted for 48h. Aspirin (400 mg kg body

weight) was then given to the animals. The results showed that Carica papaya extract significantly reduced the ulcer index, lipid peroxide levels and alkaline phosphatase activity in the rats. The results indicate that Carica papaya may exert its gastro protective effect by a free radical scavenging action. The study suggested that Carica papaya may have considerable therapeutic potential in the treatment of gastric diseases.

Neeraj Mishra, et al (2011) conducted a study to evaluate the antioxidant and chemo preventive potential of vitamin c rich fruits (papaya, guava, kiwi, strawberry), the in vitro antimicrobial activity was performed by Agar well diffusion method Muller Hinton Agar medium against E. coli. and all the extracts showed significant antimicrobial activity. The study concludes that all the extracts showed significant antimicrobial activity.

Srinivas Kantham, et al (2011) conducted a study to determine the influence of Carica Papaya Linn Extracts on Paracetamol and Thioacetamide Induced Hepatic Damage in Rats. The study was conducted in India among rats .The results showed that hepatoprotective potential was evaluated by measuring biomarkers and this is mainly due to the presence of vitamin C.

JA Olagunjua, et al (2010) conducted a study on nephroprotective activities of the aqueous seed extract of Carica papaya Linn. in carbon tetrachloride induced renal injured Wister rats. The study was conducted on three groups of rats (6 male rats per group), a dose- and time-dependent study for 7 days. Results showed that intraperitoneal injection of CCl4 caused a significant ($p<0.001$) elevation in the serum levels of uric acid, urea and creatinine and induced histological features of severe tubule-interstitial necrosis The study concluded that CPE has nephroprotective effect on CCl4 renal injured rats, an effect which could be mediated by any of the phytocomponents present in it via either antioxidant and/or free radical scavenging mechanism(s).

Eric Collard et al (2010), conducted a study to identify the improved Function of Diabetic Wound-Site Macrophages and Accelerated Wound Closure in Response to Oral Supplementation of a Fermented Papaya Preparation. The study was conducted among adult obese diabetic mice. Results showed that FPP has a long track record of safe human consumption, testing of the beneficial effects of FPP on diabetic wound–related outcomes in a clinical setting are warranted.

Noriko and ostuki, et al (2010), conducted a study to evaluate the aqueous extract of carica papaya leaves exhibits anti-tumor activity. The study was conducted among cancer patients in India .Materials and methods: The effect of CP extract on the proliferative responses of tumor cell lines and human peripheral blood mononuclear cells (PBMC), and cytotoxic activities of PBMC were assessed by [3H]-thymidine incorporation . Results showed that there is a significant growth inhibitory activity of the CP extract on tumor cell lines.. The study concluded that Carica papaya leaf extract can mediate a Th1 type shift in human immune system.

Pablo Garcia Solis, et al (2009), conducted a study on screening of antiproliferative effect of aqueous extracts of plant foods consumed in México on the breast cancer cell line MCF-7.The study was conducted among 14 plant foods .The result showed that papaya extract had a significant antiproliferative effect measured with the methylthiazolydiphenyl-tetrazolium bromide assay. The study concluded that each extract of plant food has a unique combination of the quantity and quality of photochemical that could determine its biological activity. Thus papaya represents a very interesting fruit to explore its antineoplastic actions.

Ian F. Starley, et al (2005) conducted a study to determine the treatment of pediatric burns using topical papaya. The study was conducted in Africa. Children were screened from the Gambia at the Royal Victoria Hospital, Banjul in the Pediatric Unit. The pulp of the papaya fruit is mashed and applied daily to full thickness and infected burns. Results showed that papaya is effective in desloughing necrotic tissue, preventing burn wound infection, and providing a granulating wound suitable for the application of a split thickness skin graft. Possible mechanisms of action include the activity of proteolytic enzymes chymopapain and papain, as well as an antimicrobial activity, although further studies are required.

SECTION E

Studies related to dietary management on premenstrual tension syndrome

Barnard ND (2011), conducted a study to test the hypothesis that a low –fat, vegetarian diet reduces dysmennorhoea and premenstrual symptoms by its effect on serum sex hormone binding globulin concentration and estrogen activity. A cross over design was conducted among 33 women followed a low fat, vegetarian diet for two menstrual

cycles. Dietary intake, serum sex hormone, binding globulin concentration, body weight, pain duration and intensity and premenstrual symptoms were assessed during each study phase. The study concluded that a low –fat vegetarian diet was associated with increased serum sex- hormone binding globulin concentration and reduces in body weight, dysmenorrheal duration & intensity and premenstrual syndrome duration.

Zohre Mahmoodi et al (2011), conducted a study on carbohydrate rich supplements and protein in relation to PMS.A cross sectional study was conducted among 80 persons .Results suggested that PMS and its symptoms intensity decrease significantly by using carbohydrate rich supplements and diets but supplement was most effective. The study concluded that protein have an effect on reducing PMS symptoms.

Duvan CI et al (2011), conducted a study to determine status of antioxidant in papaya fruit on premenstrual tension syndrome. An experimental study was done among women with premenstrual symptoms. Sample size is 200.Participants was assessed by premenstrual assessment form. Results showed that antioxidant level was increased and adequate to treat the premenstrual symptoms.

Turk J Biol et al (2010), conducted a study to determine the effectiveness of papaya fruit on premenstrual tension syndrome in turkey. An experimental study was done among adolescent girls by using randomized technique. Screening was done based on premenstrual symptoms. Treatment includes supplementation of papaya juice 100 gm for three months. Results showed that level of premenstrual tension syndrome was decreased. Thus concluded that the papayas have an effect on premenstrual tension syndrome.

Susan Thys –Jacobs et al (2010), conducted a study to determine the cyclical changes in calcium metabolism across the menstrual cycle in women with premenstrual dysphoric disorder. A cross – sectional and prospective study of women was used in this study. Participating women underwent 2 months of self –assessment symptom screening and 1 month of hormonal evaluation. Results showed that calcium regulating hormones varied significantly across the menstrual cycle in both groups. The study concluded that cyclical fluctuations of the calcium –regulating hormones may help us better understand some of the psychological and somatic features of PMDD.

Nagata C et al (2010), conducted a study to evaluate the relations of intakes of soy, fat and other relations of dietary components to premenstrual symptoms. A cross sectional study was conducted among 1089 Japanese women aged 19 – 34 years in 3 colleges and 2 nursing schools. Participants were assessed by a semi quantitative food frequency questionnaire and MDQ. Results showed that neither soy product nor isoflavone intake was significantly associated with change in MDQ score in the premenstrual cycle. The study concluded that high intake of fats and lower intake of foods with high concentration of carbohydrate may be associated with premenstrual symptoms.

Khalid Rahman et al (2010), conducted a study to evaluate the estrogenic activity of the constituents in the fruits of vitex rofundifolial for potential treatment of PMS.E-screen assessment assay was used. Results showed that presence of rofundifolial and agnuside could stimulate proliferation of MCF-7 cells. The study concluded the fruits showed the estrogenic activity and useful in regulating the hormone levels.

Edinburg et al (2009),conducted a study to assess the effectiveness of papaya fruit on premenstrual tension syndrome between the ages of 18 to 45 years.920 women were screened .500 were enrolled. There was no difference between groups on the mean screening symptom score of the luteal, menstrual and inter menstrual phase of the menstrual cycle. Since there is no significant relationship between premenstrual tension syndrome and papaya fruit among adolescent girls thus the null hypothesis H0 1 stated that earlier was rejected.

London R.S et al (2009), conducted a study to assess the effectiveness of vitamin and mineral supplement in controlling symptoms of premenstrual syndrome. A double blind randomized study was conducted among 44 women with PMS. Subjects were screened by using menstrual symptom questionnaire .Subjects were receiving 6 or 12 tablets of the supplement a day for three menstrual cycles for four subgroups. Results showed that significant treatment effects were noted in 3 subgroups for the 6 tablet group and in all four subgroups for the 12- tablet group. The study concluded that nutritional supplement may play a role in the management of women with PMS.

Murakami K et al (2009), conducted a study on dietary glycemic index is associated with decreased premenstrual symptoms in young Japanese women. A cross –

sectional study was conducted among 640 female Japanese dietetic students aged 18 -2 years .participants were assessed by using the retrospective version of the Moo Menstrual Distress Questionnaire (MDQ).Results showed that dietary glycemic index was independently inversely associated with total MDQ score in the premenstrual phase(p for trend=0.02).The study conclude that the dietary glycemic index was independently associated with decreased premenstrual symptoms I a group of young Japanese women.

Bertone –Johnson et al (2001), conducted a study on calcium and vitamin D intake and risk of incident of premenstrual syndrome. A case control study was conducted within the prospective Nurse's health study cohort 11.Participants were a subset of women aged 27 to 44 years .The sample size was 1057 women. Intake of calcium and vitamin D was measured in 1991, 1995 and 1999 by a food frequency questionnaire. Results showed that the intake of calcium from food sources was also inversely related to PMS. The study concluded that a high intake of calcium and vitamin D reduce the risk of PMS.

Abraham GE et al (2001), had conducted a study to determine the role of nutrition in managing the premenstrual symptoms. A double blind study was used in this study. Open trials suggested that an initial dosage of the supplement consisting of 6 tablets daily gave the best symptomatic relief during the first 3 – 6 months. Results showed that PMTS was decreased and reported feeling better by the patients. The study concluded that nutrition play an important role in managing premenstrual tension syndrome.

Brush MG et al (1998), conducted a study to determine the effectiveness of vitamin B6 on premenstrual tension syndrome. A retrospective study was conducted among 630 women suffering from premenstrual tension syndrome in US. Results showed that 70 – 88 % of symptoms were cured .The study conclude that the pyridoxine play a role in reducing PMS symptoms.

Faccinetti F et al (1991), conducted a study to determine the effectiveness of magnesium on premenstrual tension syndrome. A randomized, double, placebo – controlled study was conducted among 38 women suffering from PMS .Participants were screened by using 4 point scale based on PMS.200 mg of magnesium in the form of tablets were given daily for 2 menstrual cycles. The study concluded that magnesium play a major in reducing PMS symptoms.

Thys – Jacobs et al (1989),conducted a study to determine the effectiveness of calcium carbonate on premenstrual tension syndrome .A randomized double blind study was conducted in outpatient medical clinic of a large city hospital .78 women was screened based on history of recurrent symptoms. Treatment includes 1000 mg of calcium carbonate daily for 3 months during luteal phase and menstrual phase. The study concluded that calcium have an effect on premenstrual tension syndrome.

London RS et al (1987), conducted a study to evaluate the efficacy of alpha tocopherol in the treatment of premenstrual tension syndrome. A randomized, double blind study was conducted among women with PMS .The sample size was 46 women .Participants were screened by standard PMS questionnaire in luteal phase of menstrual cycle before and after treatment. Diet rich in vitamin E was supplied for 2 months. The study concluded that a markable improvement in reducing the level of PMS.

PART – II

Conceptual Framework

The conceptual frame work and the model for the present study is based on Weidenbach's helping art of clinical nursing theory [1964]. It describes a desired situation and a way to attain it. It directs action towards the implicit goal. This theory has three factors central purpose, prescription, and realities. A nurse develops a prescription based on central purpose and implements it according to the realities of the situation.

1. Central purpose is the model refers to what to accomplish. It is the overall goal towards which a nurse strives. It transcends the immediate intent of the assignment or basic by specifically directing towards the patient good.
2. Prescription refers to the plan of care for a patient. It specifies the nature of action that will fulfill the nurse's central purpose and the rationale of the action
3. A reality refers to the physical, psychological, emotional, spiritual factors that come into play in a situation involving nursing action. The five realities are
    a) Agent
    b) Recipient.
    c) Goal.
    d) Means
    e) Environment

The conceptualization of nursing practice according to this theory consists of three steps which are as follows.

1. Identifying the need for help.
2. Ministering the need for help.
3. Validating the need for help.

The model adopted for this study is a modified form of Weidenbach's helping art of clinical nursing theory. The investigator adopted this model and perceived apt in enabling to assist the outcome of papaya fruit on premenstrual tension syndrome. This model views the premenstrual tension syndrome among adolescent girls as an individual unique experience that is in need for relief from PMTS.

The central purpose of the study is to facilitate the adolescent girls to cope up with the premenstrual tension syndrome. The investigator planned the prescription that will

fulfill the central purpose by identifying the various means to achieve the goal. Thus the investigator selected two groups where papaya fruit is provided for one group and no intervention for the other group.

The realities identified is the

Agent-investigator

Recipient-adolescent girls

Goal-reduce the level of PMTS

Means-papaya fruit

Environment – school

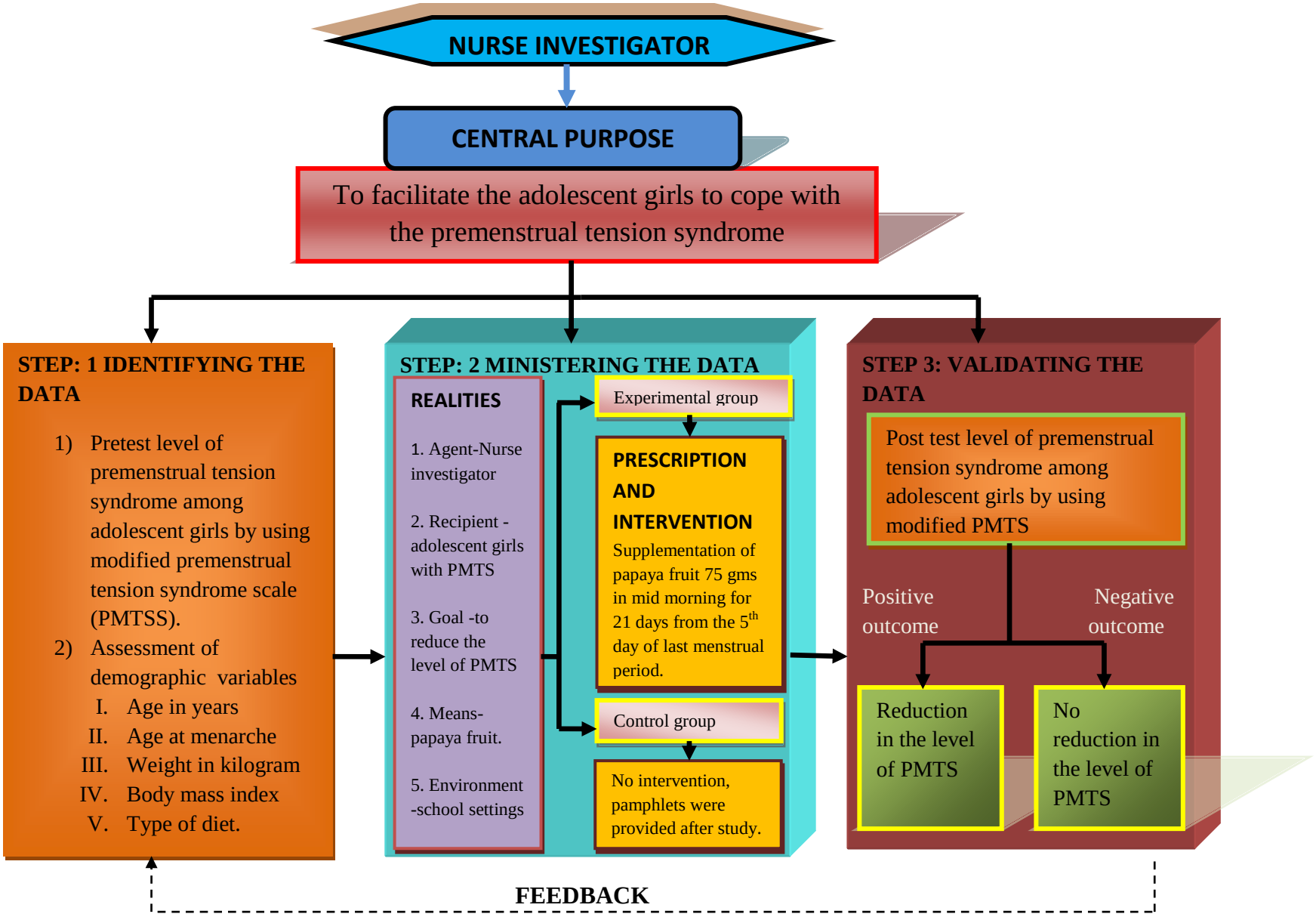

Fig (i): CONCEPTUAL FRAMEWORK- MODIFIED WEINDENBACHG'S HELPING ART NURSING THEORY (1964)

CHAPTER – III

RESEARCH METHODOLOGY

This chapter represents the research methodology adopted for the study which includes research approach, research design, research variables, settings, population, sample, sample size, sampling techniques, and tool for data collection procedures. The present study is aimed to evaluate the outcome of papaya fruit on PMTS among adolescent girls.

RESEARCH APPROACH

An evaluative approach was used to evaluate the outcome of papaya fruit on PMTS.

RESEARCH DESIGN

Selection of the design based on purpose of the study .The purpose of the study was used to evaluate the outcome of papaya fruit on PMTS, so quasi experimental design was selected by using manipulation and control .

Group	**Preassessment Modified PMTS(O_1)**	**Intervention (Papaya fruit) X**	**Post assessment Modified PMTS(O_2)**
Experimental group	O_1	X	O_2
Control group	O_1	-	O_2

RESEARCH VARIABLES

Independent Variable

Papaya fruit

Dependent Variable

Level of Premenstrual tension syndrome

SETTINGS

The study was conducted in Government Girl's Higher Secondary School, Arakkonam, Vellore district for experimental group and Government Higher Secondary

School, Pallavaram, Vellore district for control group. The distance between these two schools is 10 kms.Keeping in mind the geographical distance, time available for data collection, availability of subjects, easy acquaintance, accessibility and the investigator selected this setting for the availability of the sample and feasibility of the study.

POPULATION

The distance between the two selected setting is 10 kms.Total number of students in each school is 2200 and 2100 respectively. In this, more than 300 girls were suffering from premenstrual tension syndrome. Total number of students studying in 7^{th}, 8^{th} and 9^{th} standard is 550 and 600 respectively. Among these girls, 30 students were selected in each school who fulfilled the inclusion criteria for experimental and control group.

Target Population

It comprises of all adolescent girls with premenstrual tension syndrome.

Accessible Population

It comprises of adolescent girls with premenstrual tension syndrome between the age group of 11 to 16 yrs.

SAMPLE

The study sample comprised of adolescent girls with premenstrual tension syndrome who fulfilled the inclusion criteria.

SAMPLE SIZE

60 samples where 30 in experimental and 30 in control group.

SAMPLING TECHNIQUE

The investigator selected samples by non probability purposive sampling technique.

SAMPLE SELECTION CRITERIA

Inclusion Criteria

1. Adolescent girls between the age group of 11 to 16 yrs.

2. Adolescent girls who were having regular periods with premenstrual tension syndrome.
3. Adolescent girls who could read English and Tamil.

Exclusion Criteria

1. Adolescent girls who were not willing to participate.
2. Adolescent girls with irregular menstrual cycle.

METHOD OF DEVELOPING THE QUESTIONNARE

The tool was constructed after extensive review of literature and discussion with experts, to collect the data. The tool to measure the PMTS was based on modified PMTS scale.

DESCRIPTION OF THE TOOL

Section – 1:

It includes age in years, age at menarche, weight in kilogram, body mass index and type of diet.

Section – 2:

This section consists of 24 symptoms which are rated based on score. The maximum score is 42 and the minimum score is 14.

SCORING PROCEDURES

Section 1: Description of demographic variables

No scoring was allotted for the demographic data. The data for this section was used for descriptive analysis.

Section 2:

In this section, the scoring is based on level of premenstrual tension syndrome. The maximum score is 42 and the minimum score is 14.The level of premenstrual tension syndrome was classified as follows:

Scoring Key

1 to 14 - Mild

15 to 28 - Moderate

29 to 42 - Severe

VALIDITY AND RELIABILITY OF THE TOOL

Validity of the Tool

Validity of the tool was obtained by submitting the tool to experts including research guide and experts in the field of obstetrician and gynecologist. Certain questions were added and modified after getting the content validity from the experts.

Reliability of the tool

The reliability of the tool was assessed for level of premenstrual tension syndrome. It was established by test-retest method. The spearman's rank correlation co-efficient was used to calculate the reliability. The reliability value was r=0.87 which shows that the tool was reliable.

Ethical Consideration

The study was conducted after getting the approval from the respective schools. The adolescent girls were clearly explained about the study purpose and written consent was obtained assurance was given to the girls that anonymity of each information would be maintained.

PILOT STUDY

The pilot study was conducted from 15 -5 -2011 to15-6-2011.

Formal consent was obtained from the school.6 adolescent girls with PMTS who fulfilled the inclusion criteria were selected and assigned to experimental and control group.

A brief introduction about self and study were given and data was collected from the adolescent girls. Consent was taken from the samples. Confidentiality of the responses was assured.

Pre assessment was done in both in experimental and control group. The premenstrual tension syndrome was assessed by modified PMTS . 75 gms of papaya fruit for 21 days was given.

Following the last day post assessment was done to assess the level of PMTS .The post test result concluded that 83.33 percent of the girls had mild premenstrual syndrome.

This trail run revealed the clarity, feasibility and practicability in all aspects to conduct the main study.

DATA COLLECTION PROCEDURE

The study was conducted from 15-6-2011 to 15-7-2011 two schools in Arakkonam.

A formal permission was obtained from the Headmaster of 2 government schools in Arakonam and 30 adolescent girls with PMTS were selected for experimental group and 30 adolescent girls with PMTS were selected for control group by using non probability purposive sampling technique. The researcher selected the samples in experimental and control group who fulfilled the inclusion criteria. A brief introduction about the self and the study was given to the adolescent girls and consent was obtained (both oral and written) and the confidentiality of the response was assured.

Pre assessment was done in both experimental and control group. The premenstrual tension syndrome was assessed by modified PMTS scale. The girls were given 75 gms of raw papaya fruit for 21 days from the 5 th day of LMP for experimental group in midmorning. Papaya fruit was not given to the control group. Following the last day intervention, post assessment was done to assess the level of PMTS.Pamphlets were distributed for both groups.

EXPERIMENTAL GROUP				**CONTROL GROUP**			
S.No.	**Sample Number**	**Pre Test**	**Post Test**	**S.No.**	**Sample Number**	**Pretest**	**Post Test**
1.	5	16-6-11	19-7-11	1.	4	15-6-11	19-7-11
2.	3	15-6-11	13-7-11	2.	3	17-6-11	18-7-11
3.	4	19-6-11	21-7-11	3.	5	19-6-11	18-7-11
4.	6	21-6-11	18-7-11	4.	2	21-6-11	21-7-11
5.	4	17-6-11	20-7-11	5.	4	22-6-11	24-7-11
6.	2	18-6-11	24-7-11	6.	6	24-6-11	23-7-11
7.	6	20-6-11	15-7-11	7.	6	26-6-11	18-7-11

DATA ANALYSIS PROCEDURE

Descriptive and inferential statistics were used to analyze the data.

Descriptive Statistics

Frequency and percentage distribution was used to describe the demographic variables in order to assess the level of premenstrual tension syndrome among adolescent girls.

Inferential Statistics

Paired and unpaired‘t’ test were used to find the outcome of papaya fruit in pre and post test.

Chi square was used to associate the post test level of premenstrual tension syndrome with the demographic variables in experimental group.

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected from 60 samples in order to assess the outcome of papaya fruit on premenstrual tension syndrome among adolescent girls in Selected School, Arakkonam.

Descriptive and inferential statistics were used for the analysis of the data. According to the study objectives, the interpretation has been tabulated and organized as follows:

ORGANISATION OF DATA

Section A : Frequency and percentage distribution of demographic variables of adolescent girls in Experimental and control group.

Section B : Assessment of pretest level of premenstrual tension syndrome among adolescent girls in experimental and control group**.**

Section C : Assessment of post test level of premenstrual tension syndrome among adolescent girls in experimental and control group.

Section D : Comparison of pretest and post test level of premenstrual tension syndrome among adolescent girls in experimental group and control group.

Section E : Comparison of post test level of premenstrual tension syndrome among adolescents between experimental and control group.

Section F : Association of post test level of premenstrual tension syndrome among adolescent girls with demographic variables in experimental group.

SECTION A

TABLE I

Frequency and percentage distribution of demographic variables in Experimental and Control group.

n= 60

Demographic Variables	Experimental group		Control Group	
	No.	%	No.	%
Age in years				
11 - 12 years	2	6.70	3	10.00
13-14 years	27	90.00	22	73.30
15-16 years	1	3.30	5	16.70
Age at menarche				
11 - 12 years	16	53.30	7	23.30
13-14 years	14	46.70	20	66.70
15-16 years	-	-	3	10.00
Weight in kilogram				
31-40kg	23	76.67	24	80.00
41-50kg	7	23.33	5	16.67
51-60kg	-	-	1	3.33
Body mass index				
<19	8	26.67	8	26.67
20-25	22	73.33	22	73.33
>30	-	-	-	-
Type of Diet				
Vegetarian	3	10.00	3	10.00
Non-vegetarian	2	6.67	2	6.67
Mixed	25	83.33	25	83.33

Table I shows frequency and percentage distribution of demographic variables in experimental and control group.

With regard to the age in years, 27(90.00%) were in the age group of 13 -14 years, 2(6.70%) were in the age group of 11 - 12 years, 1(3.30%) were in the age group of 15 -16 years in experimental group and 22(73.30%) were in the age group of 13-14 years,5(16.70%) were in the age group of 15-16 years,3(10.00%) were in the age group of 11-12 years in control group.

Considering the age at menarche,16(53.30%) were in the age group of 11-12 years,14(46.70%) were in the age group of 13-14 years, no one is in the age group of 15-16 years in experimental group and 20(66.70%)were in the age group of 13-14 years,7(23.30%)were in the age group of 11-12 years,3(10.00%)were in the age group of 15-16 years in control group.

With regard to the weight in kilogram, 23(76.67%) were in 31-40 kg, 7(23.33%) were in 41-50 kg, no one in 51-60 kg in experimental group and 24(80.00%) were in 31-40 kg, 5(16.67%) were in 41-50 kg, 1(6.70%) were in 51-60kg in control group.

Considering the body mass index, 22(73.33%) were in between 20-25, 8(26.67%)were less than 19, no one is greater than 30 in experimental group and 22(73.33%) were in between 20 -25, 6(26.67%)were less than 19, no one is greater than 30 in control group.

Regarding the type of diet, 25(83.33%) belongs to mixed diet, 3(10.00%) belongs to vegetarian, 2(6.67%) belongs to non vegetarian in experimental group as well as same in control group.

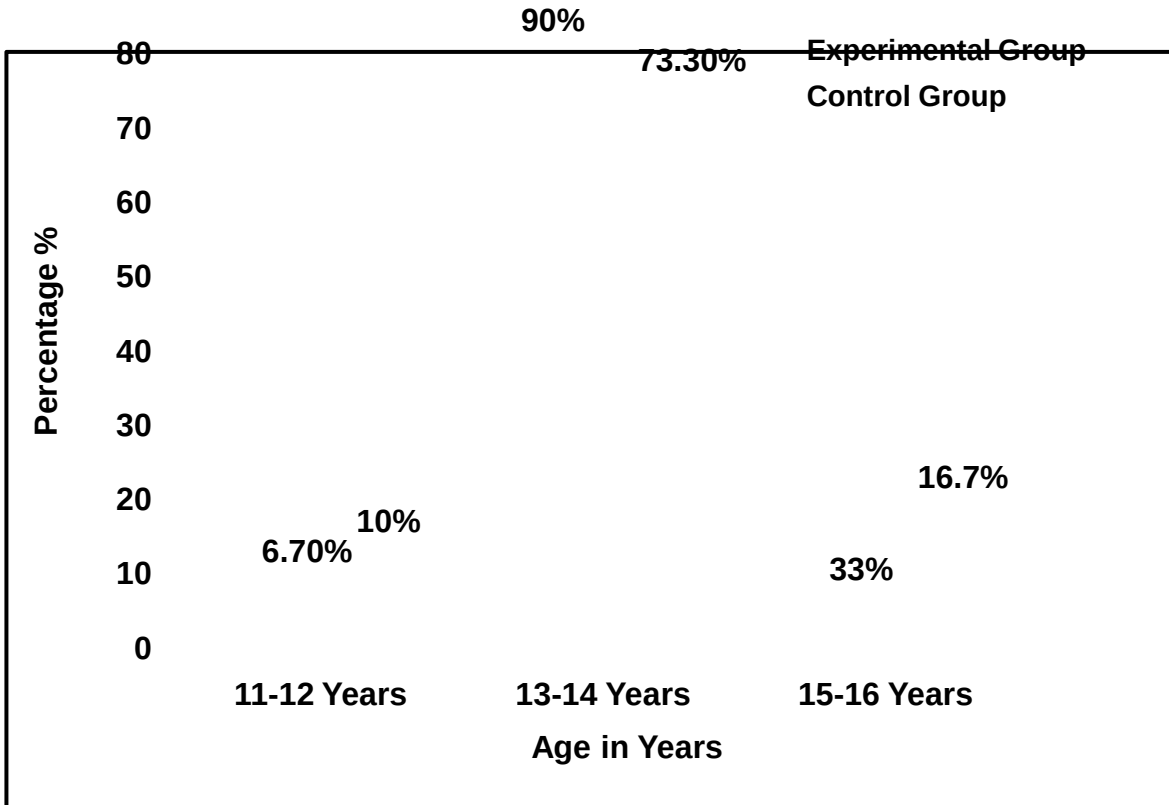

Fig (ii): Percentage distribution of age in years of adolescent girls in experimental and control group.

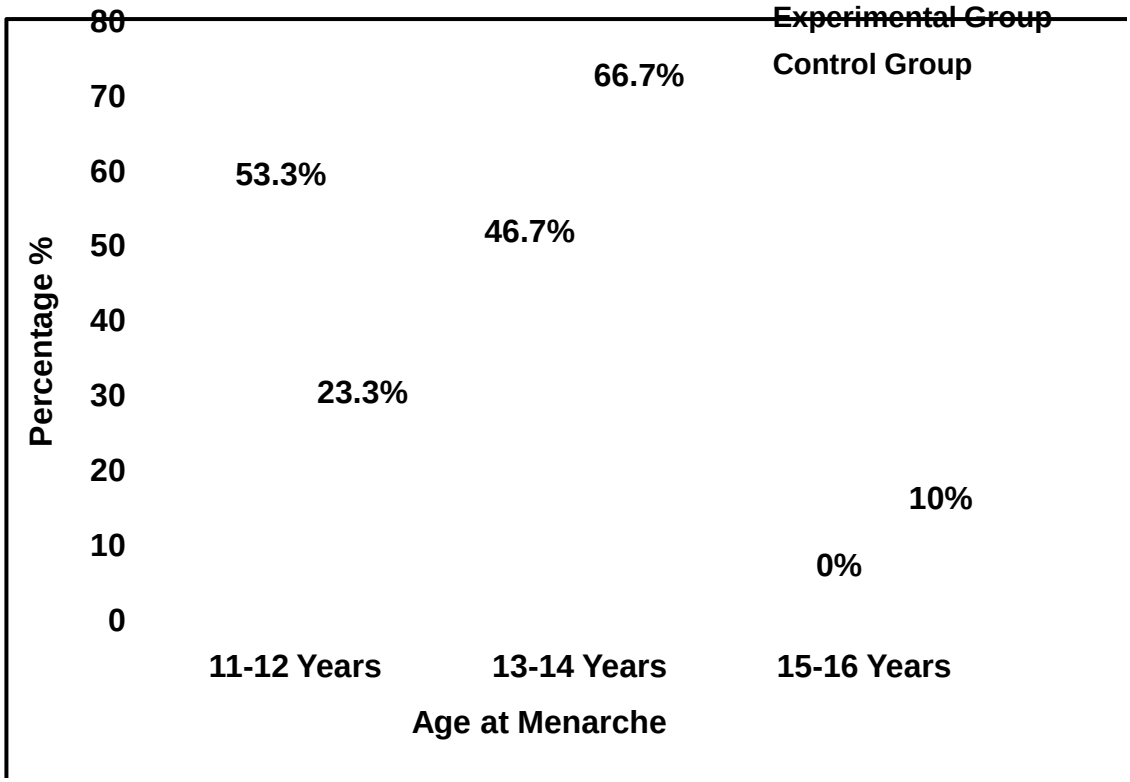

Fig (iii): Percentage distribution of age at menarche of adolescent girls in experimental and control group.

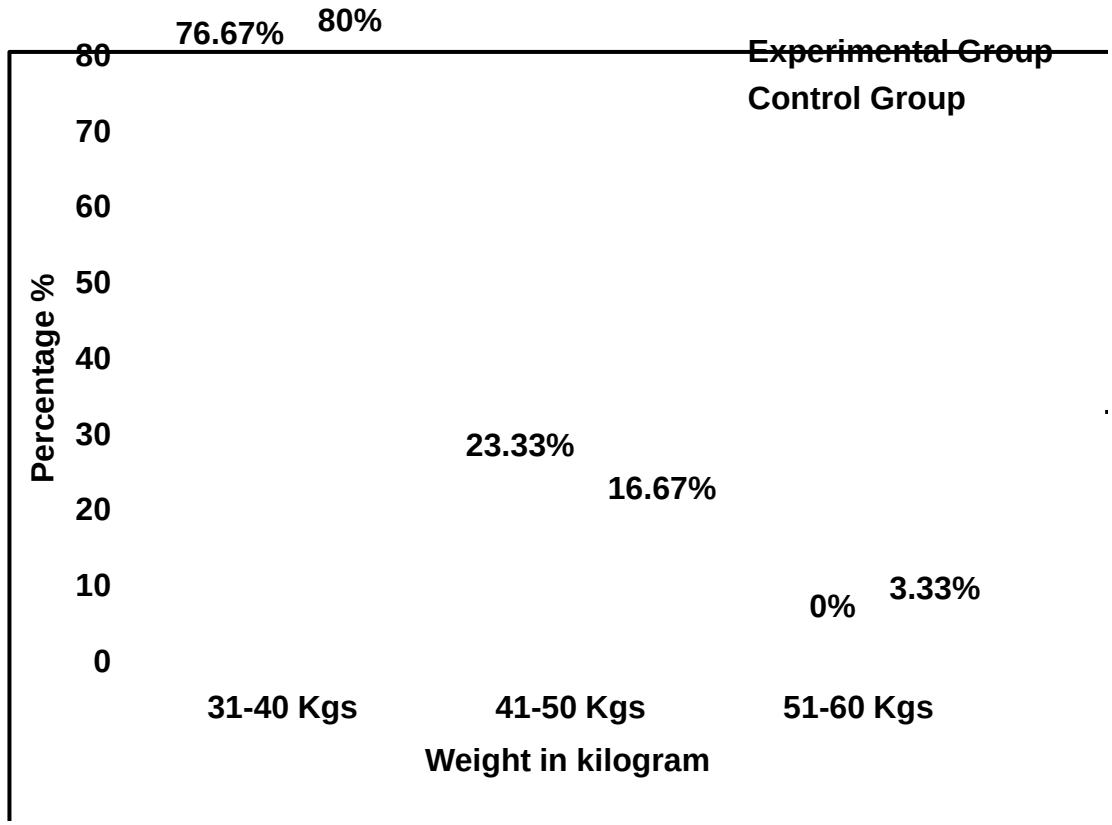

Fig (iv): Percentage distribution of weight in kilogram among adolescent girls in experimental and control group.

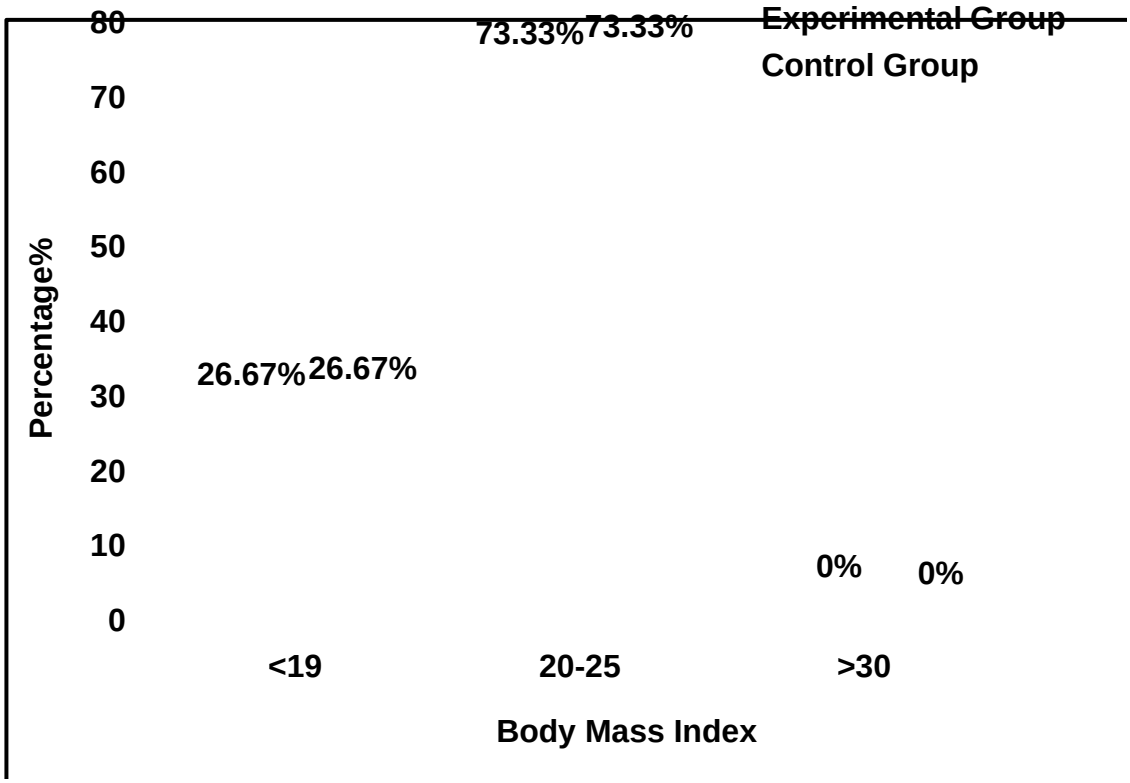

Fig (v): Percentage distribution of body mass index among adolescent girls in experimental and control group.

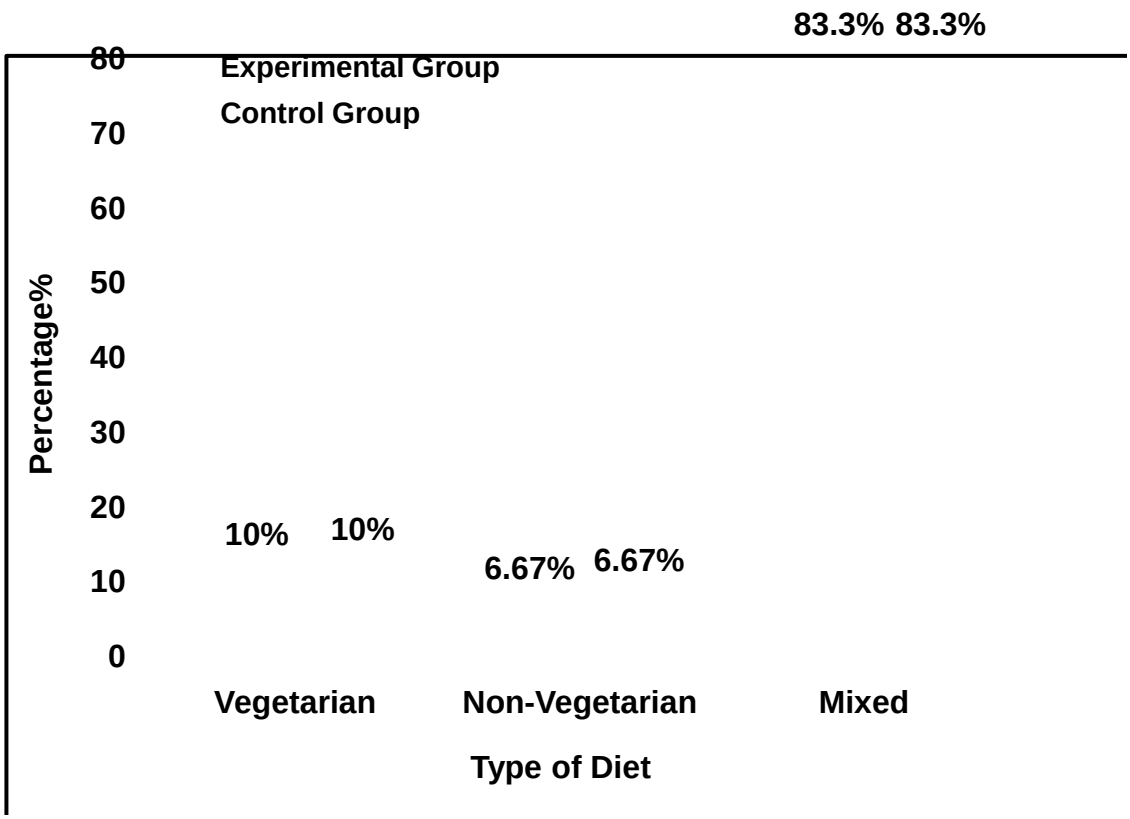

Fig (vi): Percentage distribution of type of diet among adolescent girls in experimental and control group.

SECTION B

Table II

Frequency and percentage distribution of pretest level of premenstrual tension syndrome among adolescent girls in experimental and control group.

n=60

Pretest	Mild (<50%)		Moderate (50-75%)		Severe (>75%)	
	No.	%	No.	%	No.	%
Experimental group	6	20	24	80	-	-
Control group	2	6.67	26	86.67	2	6.67

Table II depicts the frequency and percentage of pretest level of premenstrual tension syndrome among adolescent girls in experimental and control group.

In the experimental group, 6(20%) had mild level of premenstrual tension syndrome, 24(80%) had moderate level of premenstrual tension syndrome, none of them comes under severe level of premenstrual tension syndrome and in the control group 2(6.67%) had mild level of premenstrual tension syndrome, 26(86.67%) had moderate level of premenstrual tension syndrome, 2(6.67%) had severe level of premenstrual tension syndrome.

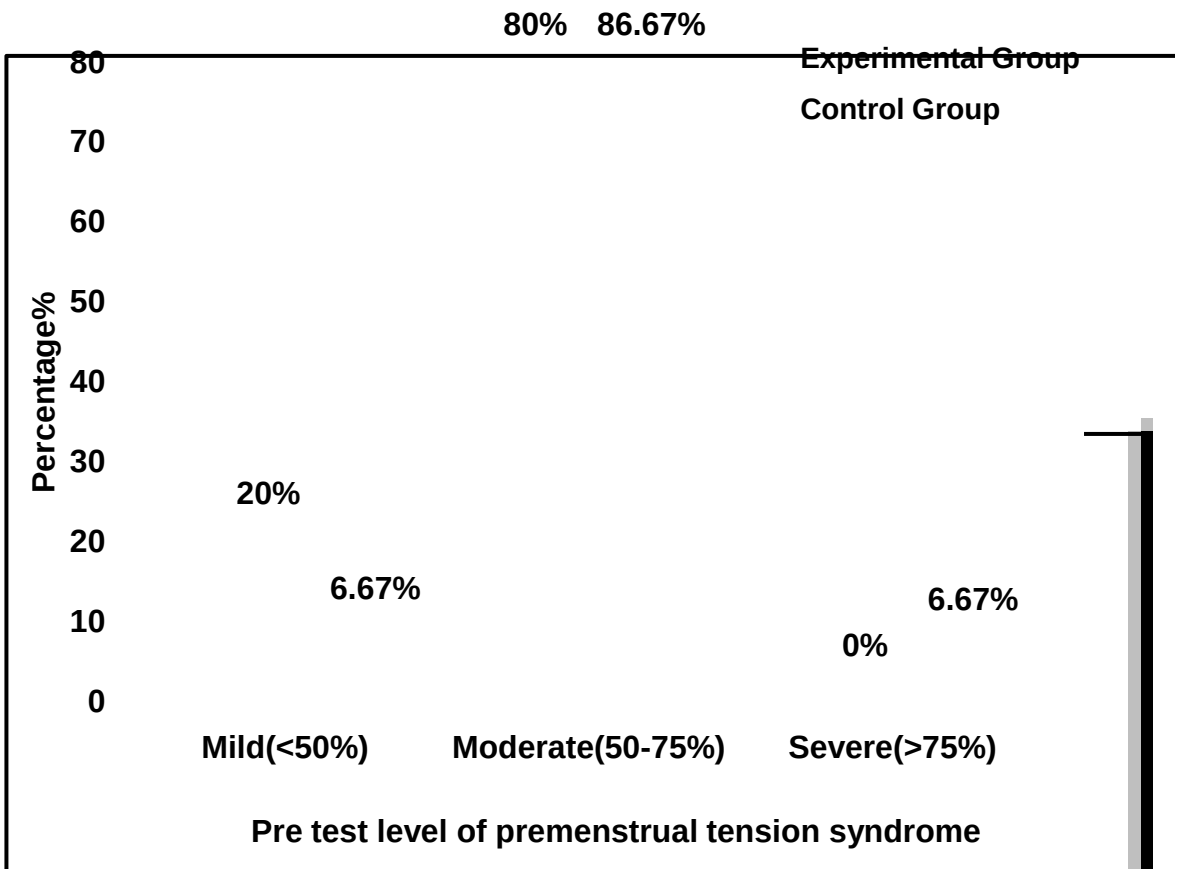

Fig (vii): Percentage distribution of pretest level of premenstrual tension syndrome among adolescent girls in experimental and control group.

SECTION –C

Table III

Frequency and percentage distribution of post test level of premenstrual tension syndrome among adolescent girls in experimental and control group.

n=60

Post test	Mild (50%)		Moderate (50-75%)		Severe (>75%)	
	No.	%	No.	%	No.	%
Experimental group	27	90	3	10	-	-
Control group	2	6.67	25	83.33	3	10

Table III depicts frequency and percentage distribution of post test level of premenstrual tension syndrome among adolescent girls in experimental and control group

In the experimental group, 27(90%) had mild level of premenstrual tension syndrome, 3(10%) had moderate level of premenstrual tension syndrome, none of them comes under the severe level of premenstrual tension syndrome and in the control group 25(83.33%) had moderate, 2(6.67%) had mild and 3(10%) severe level of premenstrual tension syndrome respectively.

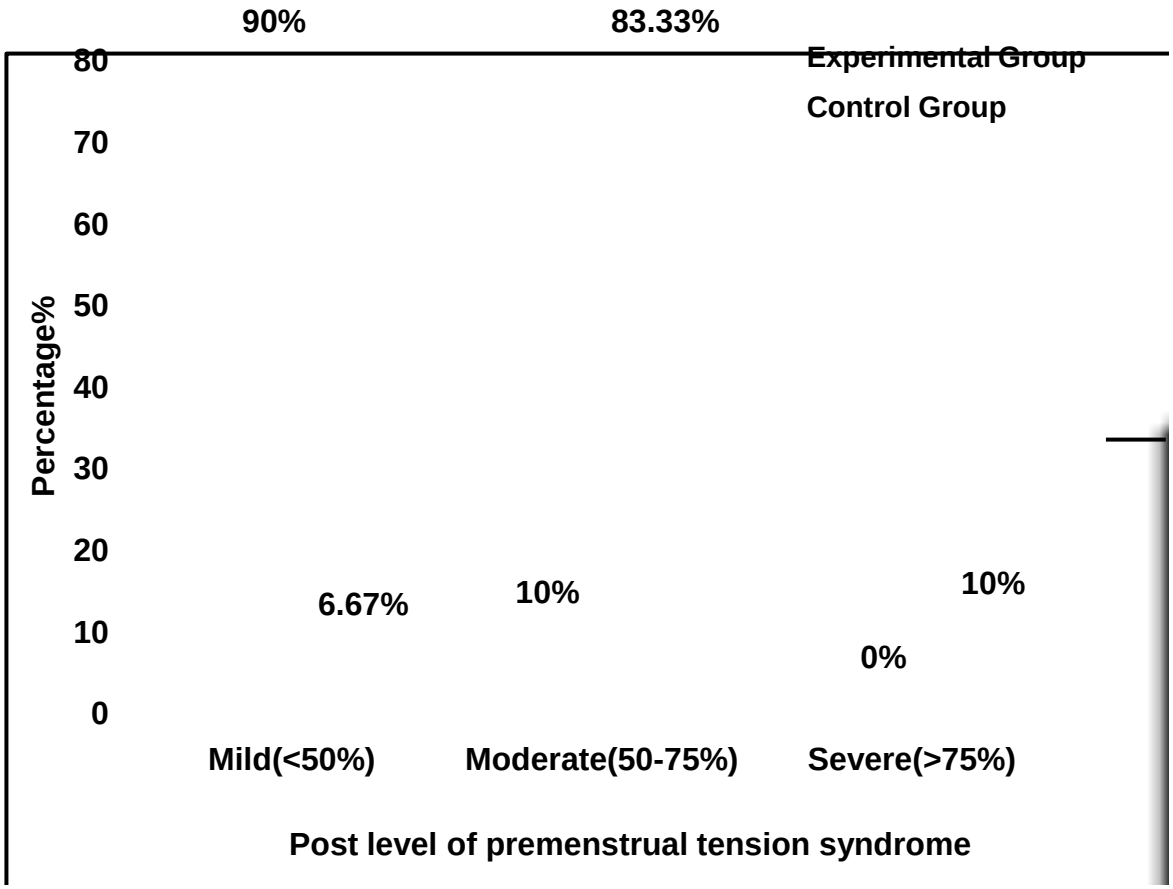

Fig (viii): Percentage distribution of post test level of premenstrual tension syndrome among adolescent girls in experimental and control group.

SECTION D

Table IV

Comparison of pretest level and post test level of premenstrual tension syndrome in experimental group.

n = 60

Test	Mean	S.D	't' value
Pre test	24.56	3.40	10.9*** ("S")
Post test	18.10	1.02	

***p<0.001, S- Significant

Table IV shows the comparison of pretest level and post test level of premenstrual tension syndrome in experimental group.

The table further reveals that in the pretest, mean score was 24.56 with S.D 3.40 and in the post test the mean score was 18.10 with S.D 1.02. The calculated't' value was 10.9 which was found to be statistically significant at p<0.001 level. This shows that there is a significant difference between pretest and posttest level of premenstrual tension syndrome among adolescent girls in experimental group.

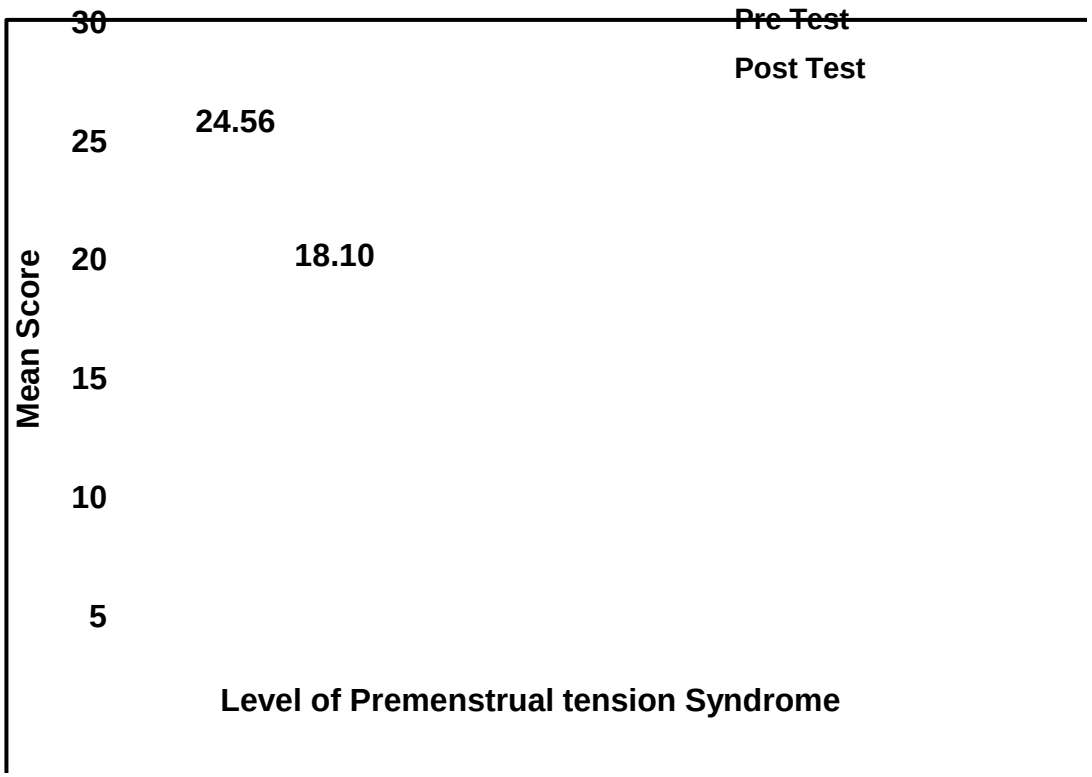

Fig (ix): Comparison of pretest level and post test level of premenstrual tension syndrome in experimental group.

Table V

Comparison of pretest level and post test level of premenstrual tension syndrome in control group.

n= 60

Test	Mean	S.D	't' value
Pre test	26.06	3.507	-4.57
Post test	26.70	3.407	N.S

N.S – Non Significant

Table v shows comparison of pretest level and post test level of premenstrual tension syndrome in control group

In the control group, the pretest mean score was 26.06 with S.D 3.50 and in the post test the mean score was 26.70 with S.D 3.40. The calculated't' value was -4.57 which shows that there was no significant difference between the pretest and post test level of premenstrual tension syndrome in the control group.

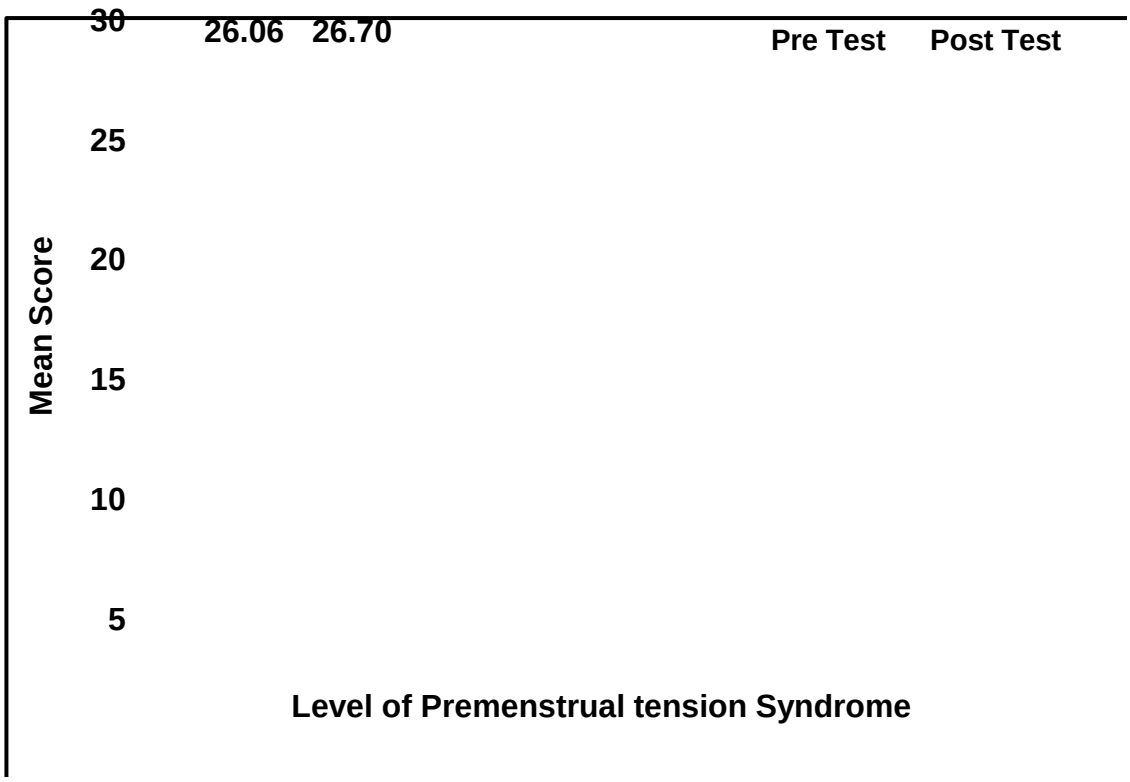

Fig (x): Comparison of pretest level and post test level of premenstrual tension syndrome in control group.

SECTION -E

Table VI

Comparison of post test level of premenstrual tension syndrome between Experimental and control group.

n=60

Test	Mean	S.D	't' value
Experimental group	18.4	1.02	13.15
Control group	26.7	3.50	("S")***

***p<0.001, S- Significant

Table VI shows that comparison of post test level of premenstrual tension syndrome between experimental and control group.

The table show that in the experimental group mean score was 18.4 with S.D 1.02 and in the control group mean score was 26.7 with S.D 3.50. The calculated't' value was 13.15 which was statistically highly significant at p<0.001 level.

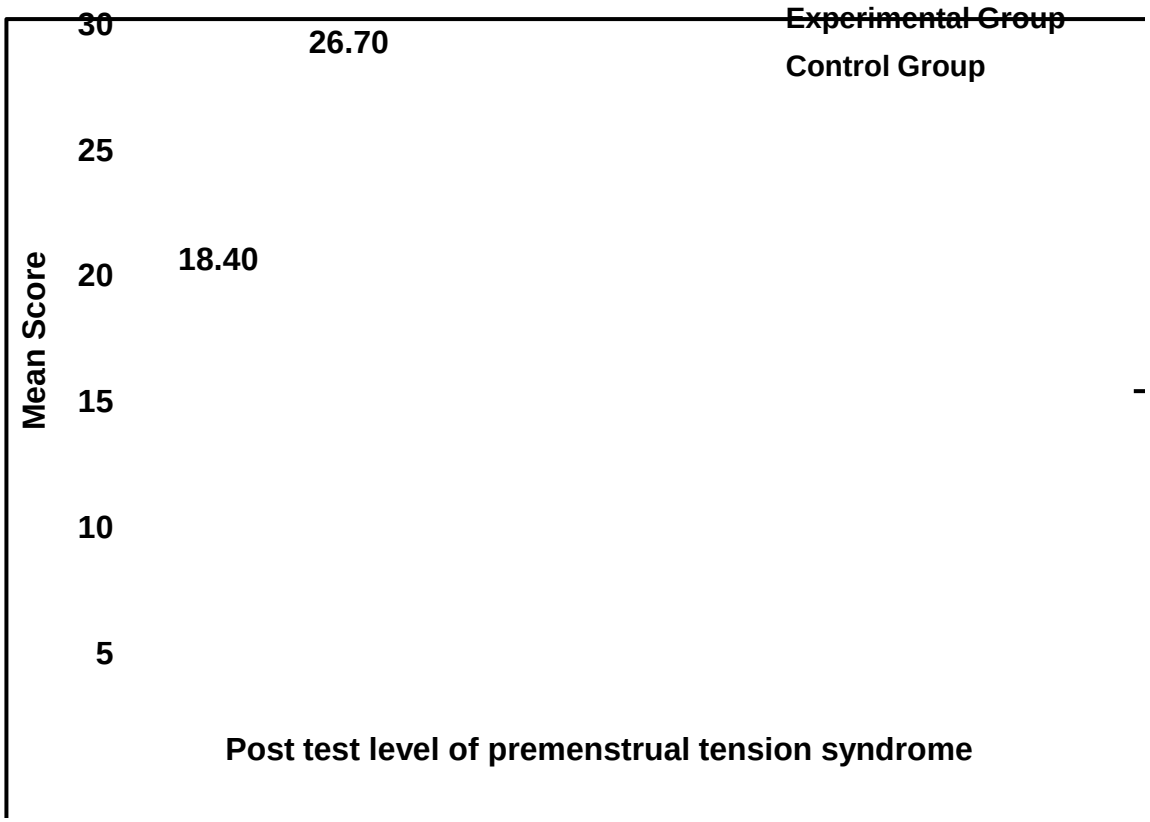

Figure (xi): Comparison of post test level of premenstrual tension syndrome between experimental and control group.

SECTION F

Table VII

Association of post test level of premenstrual tension syndrome among adolescent girls with the demographic variables in experimental group.

n= 30

Demographic Variables	Mild		Moderate		Severe		Chi Square Value
	No.	%	No.	%	No.	%	
Age in years							$\chi^2 = 6.370$ d.f = 4 N.S
11-12 years	-	-	2	6.67	-	-	
13-14 years	27	90.00	-	-	-	-	
15-16years	-	-	1	3.33	-	-	
Age at menarche							$\chi^2 = 6.500$ d.f = 4 N.S
11-12 years	16	53.33	-	-	-	-	
13-14 years	11	36.67	3	10.00	-	-	
15-16years	-	-	-	-	-	-	
Weight in kilogram							$\chi^2 = 0.200$ d.f = 4 N.S
31-40 kg	22	73.33	1	3.33	-	-	
41-50 kg	5	16.67	2	6.67	-	-	
51-60kg	-	-	-	-	-	-	
Body mass index							$\chi^2 = 0.692$ d.f = 4 N.S
<19	8	26.67	-	-	-	-	
20-25	19	63.33	3	10.00	-	-	
>30	-	-	-	-	-	-	
Type of diet							$\chi^2 = 0.500$ d.f = 4 N.S
Vegetarian	3	10.00	-	-	-	-	
Non vegetarian	2	6.67	-	-	-	-	
Mixed	22	73.33	3	10.00	-	-	

N.S –Non significant

Table VII shows the association of post test level of premenstrual tension syndrome in the experimental group with demographic variables.

The analysis reveals that there was no statistically significant association between post test levels of premenstrual tension syndrome with any of the demographic variables.

CHAPTER – V

DISCUSSION

This chapter discusses the findings of the study derived from descriptive and inferential statistical analysis.

The statement of the problem was "A study to assess the outcome of papaya fruit on premenstrual tension syndrome among adolescent girls in a selected setting"

The objectives were

1. To assess the pre-test level of premenstrual tension syndrome among adolescent girls in experimental and control group.
2. To assess the post- test level of premenstrual tension syndrome among adolescent girls in experimental group and in control group.
3. To determine the outcome of papaya fruit in experimental and control group.
4. To associate the post assessment level of premenstrual tension syndrome with the demographic variables in experimental group.

The demographic variables selected in the study were age in years, age at menarche, weight in kilogram, body mass index, type of diet.

The reliability of the tool was assessed for level of premenstrual tension syndrome by test-retest method. The spearman's rank correlation co-efficient was used to calculate the reliability. The reliability value was r=0.87 which shows that the tool was reliable. In demographic variables, two similarities (body mass index, type of diet) were present which indicates the homogeneity between two selected schools.

With regard to the age in the experimental group, majority 27(90.00%) were in the age group of 13 -14 years and with that of control group majority 22(73.70%) were in the age group of 13-14 years.

Considering the age at menarche of the adolescent girls in the experimental group, majority 16(53.30%) attained menarche in the age group of 11-12 years and in the control group majority 20(66.70%) attained menarche in the age group of13-14 years.

Regarding the weight in kilogram in the experimental group, majority 23(76.67%) were weighed in between 31-40 kg and in the control group majority 24(80.00%) were weighed in between 31- 40 kg.

Considering the body mass index, majority 22(73.33%) is in the range between 20 - 25 in experimental and control group.

Regarding the type of diet in experimental group, majority 25(83.33%) belongs mixed diet and in control group majority 25(83.33%) belongs to mixed diet.

The first objective was to assess the pre-test level of premenstrual tension syndrome among adolescent girls in experimental and control group.

In the experimental group, majority 24 (80%) of adolescents girls were in the moderate level of premenstrual tension syndrome, 6(20%) of adolescents girls were in the mild level of premenstrual tension syndrome none of them comes under the severe level of premenstrual tension syndrome.

In the control group, majority 26(86.67%) of adolescent girls were in the moderate level of premenstrual tension syndrome, 2(6.67%) were in the mild level of premenstrual tension syndrome and 2(6.67%) were in the severe level of premenstrual tension syndrome.

The findings of the study were consistent with the study done by Samia Tabassum et al (2010), had conducted a study to determine the frequency and severity of premenstrual syndrome in young college girls in Europe. An observational study was conducted among 384 young girls by convenient sampling technique. Data was collected over two cycles by filling a 29 items shortened premenstrual assessment form. The results showed that the frequency of premenstrual syndrome was 53%according to ICD -10

criteria among which 42% were mild, 18.2% were moderate and 31.7% were severe. The study concludes that premenstrual syndrome is a common problem in young girls.

The second objective was to assess the post-test level of premenstrual tension syndrome among adolescent girls in experimental and control group.

In the experimental group, majority 27(90%) had mild level of premenstrual tension syndrome, 3(10%) were in the moderate level of premenstrual tension syndrome and in the control group 25(83.33%) had moderate, 2(6.67%) had mild and 3(10%) had severe level of premenstrual tension syndrome respectively.

The third objective was to determine the outcome of papaya fruit among adolescent girls in experimental and control group.

In the experimental group, the pretest mean score was 24.56 with S.D 3.40 and in the post test the mean score was 18.10 with S.D1.02. The calculated't' value was 10.9 which was statistically highly significant at $p<0.001$ level.

Hence the research hypothesis H_1 stated that "there is a significant relationship between premenstrual tension syndrome and papaya fruit" was accepted.

The study findings were found to be consistent with the study conducted by Edinburg et al (2009) which assess the effectiveness of papaya fruit on premenstrual tension syndrome between the ages of 18 to 45 years.920 women were screened.500 were enrolled. There was no difference between groups on the mean screening symptom score of the luteal, menstrual and inter menstrual phase of the menstrual cycle. Since there is a significant relationship between premenstrual tension syndrome and papaya fruit among adolescent girls thus the research hypothesis H_1 stated that earlier was accepted.

The conceptual framework of this study was based on modified Weidenbach's helping art of clinical nursing theory [1964]. The investigator adopted this model and perceived apt in enabling to assist the outcome of papaya fruit on premenstrual tension syndrome. This model views the premenstrual symptoms among adolescent girls as an individual unique experience that is in need for relief from premenstrual tension syndrome. The central purpose of the study is to facilitate the adolescent girls to cope up with the premenstrual tension syndrome. The investigator planned the prescription that

will fulfill the central purpose by identifying the various means to achieve the goal. Thus the investigator selected two groups where papaya fruit is provided for one group and no intervention for the other group.

The fourth objective was to associate the level of premenstrual tension syndrome among adolescent girls in experimental group with selected demographic variables.

The association table VII reveals that the demographic variable in the experimental group were not associated with post assessment level of premenstrual tension syndrome among adolescent girls.

The study findings were consistent with the study conducted by Janita P. C. Chau et al (1998), conducted a study to determine the effects of an educational programme on adolescents with premenstrual syndrome .Participants from a sample of 94 schoolgirls aged between 14 and 18 years from four secondary schools in Hong Kong were assigned to either the experimental or control group. Immediately following the education program, the schoolgirls in the experimental group had significantly increased knowledge scores as measured by the Premenstrual Syndrome Knowledge Questionnaire. Three months following the education program, schoolgirls in the experimental group reported having a significant reduction in total PMS scores and three of the subscale scores as measured by a translated version of Abraham's Menstrual Symptom Questionnaire. The results showed that no significant association between demographic variables with the post test level of premenstrual syndrome.

The study findings concluded that the adolescent girls in experimental group had reduction in the PMTS when compared with control group after the intervention; hence papaya fruit can be incorporated as an effective treatment in managing the PMTS among adolescent girls.

CHAPTER – VI

SUMMARY, NURSING IMPLICATIONS, RECOMMENDATIONS AND LIMITATION

This chapter represents the summary, implications, recommendations and limitation based on the objectives of the study.

SUMMARY

The statement of the study was **"**A study to assess the outcome of papaya fruit on premenstrual tension syndrome among adolescent girls in a selected setting".

The objectives of the study were

1. To assess the pre-test level of premenstrual tension syndrome among adolescent girls in experimental and control group.
2. To assess the post- test level of premenstrual tension syndrome among adolescent girls in experimental group and in control group.
3. To determine the outcome of papaya fruit in experimental and control group.
4. To associate the post assessment level of premenstrual tension syndrome with the demographic variables in experimental group.

The assumptions of the study were

1. Most of the adolescent girls may have premenstrual tension syndrome.
2. Papaya fruit may have some effect on premenstrual tension syndrome.

The research hypothesis was

H_1: There is a significant relationship between the premenstrual tension syndrome and papaya fruit.

Review of literature revealed that studies related to papaya fruit and effects of papaya fruit on premenstrual tension syndrome. The conceptual frame work adopted for the study was based on modified Weidenbach's helping art nursing theory. The evaluative approach and a quasi experimental design were used. The study was conducted in

Government Girl's higher secondary school, Arakkonam, Vellore district for experimental group and Government higher secondary school, pallavaram, Vellore district for control group. Adolescent girls who fulfilled inclusion criteria were selected and was assigned into experimental and control group respectively. Pilot study and the main study were conducted in the same setting. Consent was obtained and confidentiality of the response was assured. Pre-test was done by using modified premenstrual tension syndrome scale Adolescent girls in experimental group given papaya fruit and then the level of premenstrual syndrome was assessed by using the same scale. But in control group post-test was assessed without any interventions.

The study findings concluded that the adolescent girls in experimental group had reduction in the level of premenstrual tension syndrome when compared with control group after the intervention; hence papaya fruit can be incorporated as an effective treatment in managing premenstrual syndrome among adolescent girls.

Analysis revealed the following.

With regard to the age in the experimental group, majority 27(90.00%) were in the age group of 13 -14 years and in control group majority 22(73.70%) were in the age group of 13-14 years.

Considering the age at menarche of the adolescent girls in the experimental group, majority 16(53.30%) attained menarche in the age group of 11-12 years and in the control group majority 20(66.70%) attained menarche in the age group of 13-14 years.

Regarding the weight in kilogram in the experimental group, majority 23(76.67%) were weighed in between 31-40 kg and in the control group majority 24(80.00%) were weighed in between 31- 40 kg.

Considering the body mass index, majority 22(73.33%) is in the range between 20 -25 in experimental as well as same in control group.

Regarding the type of diet in experimental group, majority 25(83.33%) belongs mixed diet and in control group majority 25(83.33%) belongs to mixed diet.

In the pretest, majority 24 (80%) of adolescents girls were in the moderate level of premenstrual tension syndrome, 6(20%) of adolescents girls were in the mild level of premenstrual tension syndrome none of them comes under the severe level of premenstrual tension syndrome in the experimental group and in the control group majority 26(86.67%) of adolescent girls were in the moderate level of premenstrual tension syndrome, 2(6.67%) were in the mild level of premenstrual tension syndrome and 2(6.67%) were in the severe level of premenstrual tension syndrome.

In the post test, majority 27(90%) had mild level of premenstrual tension syndrome, 3(10%) had moderate level of premenstrual tension syndrome none comes under the sever level of premenstrual tension syndrome and in the control group, majority 25 (83.33%) had moderate level of premenstrual tension syndrome, 2(6.67%) had mild and 3(10%) had severe level of premenstrual tension syndrome.

In the experimental group, the pretest mean score was 24.56 with S.D 3.40 and in the post test the mean score was 18.10 with S.D 1.02. The calculated‘t’ value was 10.9 which was statistically highly significant at $p<0.001$ level. This shows that there is a significant difference between pretest and post test level of premenstrual tension syndrome among adolescent girls in experimental group.

In the control group, the pretest mean score was 26.06 with S.D 3.50 and in the post test, the mean score was 26.70 with S.D 3.40.The calculated‘t’ value was -4.57 which shows that no significant difference between the pretest and post test level of premenstrual tension syndrome among adolescent girls in control group.

The association table VII reveals that the demographic variables in the experimental group were not associated with post assessment level of premenstrual tension syndrome among adolescent girls.

NURSING IMPLICATIONS

The investigator has derived the following implications from the study which is vital concern in the field of nursing practice, administration, education and research.

Nursing Practice

The nurse have to health educate in reducing premenstrual tension syndrome as an independent nursing intervention. This can be facilitated by motivating the nurses to

1. Insist the adolescent girls to take more amounts of fruits in their daily diet.
2. Teach adolescent girls and significant others about the benefits of taking fruits in both physical as well as psychological aspect during premenstrual tension in syndrome.

Nursing Administration

1. The Nurse administrator should provide holistic care approach for premenstrual syndrome.
2. The Nurse administrator should conduct continuing education programme and in service education program on papaya fruit and its wide range benefit on management of premenstrual symptoms.
3. The Nurse administrator can conduct school health programme by creating awareness regarding premenstrual tension syndrome among adolescent girls.

Nursing Education

1. The holistic care approach should be emphasized more during the training period of nursing students.
2. The student nurses should have greater involvement in conducting workshop, seminar, symposium related to premenstrual tension syndrome being organized by the same or any other institution.
3. Article on dietary management for premenstrual tension syndrome should be made available in nursing journals.
4. Journals should be made available at nursing schools and colleges related to dietary management of fruits on PMTS.

Nursing Research

1. The finding of the study serves as a basic for the student to conduct further studies regarding management of premenstrual symptoms.
2. Research findings should be disseminated through conference, seminars, publication in journals, and World Wide Web.

3. Nurse researcher can conduct more research on premenstrual tension syndrome in all settings.

RECOMMENDATIONS

1. A similar study can be conducted with a large sample size..
2. A Similar study can be conducted by extending the period of data collection..
3. A similar study can be conducted as structured teaching programme.
4. Comparative study may be conducted to evaluate the effectiveness of dietary management and in combination with other complementary therapies.
5. A similar study can be conducted among various age groups of women.
6. A similar study can be carried out in other areas such as community and hospital.

LIMITATION

The review of literature does not contain more Indian studies related to outcome of papaya fruit on premenstrual tension syndrome.

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www.medline.com
www.pubmed.com

APPENDIX – A

LIST OF EXPERTS FOR CONTENT VALIDITY

1. **C.Susila, M.Sc.(N)., Ph.D.,**
   Principal,
   Billroth College of Nursing,
   Chennai.
2. **Rosaline Rachel, R.N., R.M., M.Sc.(N).,**
   Principal,
   Indra College of Nursing,
   Pandur – 631 203,
   Thiruvallur.

3. **Abirami, R.N., R.M., M.Sc. (N),**
   Reader-Maternal Health Nursing Department,
   SRM College of Nursing,
   Chennai.

4. **Dhanalakshmi, M.B.B.S., DGO,**
   Medical Expert,
   Obstetrician Gynecologist,
   Shenoy Nagar Health Post,
   Aminjikarai, Chennai-600 034

5. **Krishnamoorthy.P,**
   Registered Dietician,
   Vijaya hospital,
   Vadapalani,
   Chennai.

LETTER SEEKING EXPERTS OPINION FOR CONTENT VALIDITY

From

R.Leelavathy
M.Sc. (N) I Year,
Vel R.S Medical College – College of Nursing,
Avadi, Chennai – 600 062.

To

Respected Madam/Sir,

Sub: Requisition for expert opinion on suggestion for content validity of the tools.

I am R.Leelavathy, a student of M.Sc.(Nursing)- II year at Vel R.S Medical College - College of Nursing, Avadi, Chennai – 62, affiliated to Dr.M.G.R.Medical University, Chennai.

As a partial fulfillment of the requirement in the M.Sc. Nursing Programme, I have to complete a dissertation the topic I have selected is **"A study to assess the outcome of papaya fruit on premenstrual tension syndrome among adolescent girls in selected setting"**

Herewith I am sending the developed tools for content validity and for your expert opinion & valuable suggestions.

Thanking you,

Yours sincerely,

(LEELAVATHY.R)

Enclosures:

1. Statement and objectives of the study
2. Blue print of the tools
3. Content validity certificate

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by **Miss. R. Leelavathy** , M.Sc. Nursing, IInd year student , Vel.R .S. Medical College - College of Nursing, Chennai on the topic **"A Study to assess the effectiveness of papaya fruit on premenstrual tension syndrome among adolescent girls in Government girls higher secondary school, Arakkonam"** is validated by the undersigned and she can proceed with this tool to conduct the main study.

SIGNATURE
Dr.C. SUSILA M.sc (N) Ph.D
PRINCIPAL
BILLROTH COLLEGE OF NURSING

Place:

Date:

BILLROTH COLLEGE OF NURSING
Date:.....
CHENNAI-600 095.

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by **Miss. R. Leelavathy** , M.Sc. Nursing, IInd year student , Vel.R .S. Medical College - College of Nursing, Chennai on the topic "**A Study to assess the effectiveness of papaya fruit on premenstrual tension syndrome among adolescent girls in Government girls higher secondary school, Arakkonam**" is validated by the undersigned and she can proceed with this tool to conduct the main study.

SIGNATURE

Place: Chennai.

Date: 2/6/11.

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by **Miss. R. Leelavathy** , M.Sc. Nursing, IInd year student , Vel.R .S. Medical College - College of Nursing, Chennai on the topic **"A Study to assess the effectiveness of papaya fruit on premenstrual tension syndrome among adolescent girls in Government girls higher secondary school, Arakkonam"** is validated by the undersigned and she can proceed with this tool to conduct the main study.

7/6/11
SIGNATURE

Place: Pandur, Thiruvallur

Date: 7/6/11

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by **Miss. R. Leelavathy** , M.Sc. Nursing, IInd year student , Vel.R .S. Medical College - College of Nursing, Chennai on the topic **"A Study to assess the effectiveness of papaya fruit on premenstrual tension syndrome among adolescent girls in Government girls higher secondary school, Arakkonam"** is validated by the undersigned and she can proceed with this tool to conduct the main study.

SIGNATURE

MEDICAL OFFICER
SHENOY NAGAR HEALTH POST
DFWB, CORPORATION OF CHENNAI

Place: Chennai

Date: 4/6/11

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by **Ms.R.Leelavathy,** M.Sc. Nursing student Vel R.S. Medical College – College of Nursing, Chennai on the topic, **"A study to assess the effectiveness of papaya fruit on premenstrual tension syndrome among adolescent girls in selected setting"** is validated by the undersigned and she can proceed with this tool to conduct the main study.

Place : Chennai
Date : 7-6-11

Signature

VIJAYA HOSPITAL CHENNAI-26 VADAPALANI

APPENDIX – B

INTRODUCTION

Good Morning!

I am a student of Vel R.S.Medical College – College of Nursing, conducting a study to assess the outcome of papaya fruit on premenstrual tension syndrome among adolescent girls in selected setting.

I request you to permit me to include you as my study participant for interventions such as supplementing papaya fruit. This will reduce the level of premenstrual tension syndrome. Further, I request you to kindly extend your co-operation in the smooth completion of the study.

Thanking You.

முகவுரை

வணக்கம்!

நான் வேல்.ஆர்.எஸ். மருத்துவ கல்லூரி செவிலியர் கல்லூரியில் முதுகலை பட்டப்படிப்பு இரண்டாம் ஆண்டு செவிலியர் கல்வி பயிலும் நான், என் படிப்பின் ஒரு பகுதியாக "பப்பாளி பழம் எவ்வாறு மாதவிடாய் வருவதற்கு முன்பு தோன்றும் அறிகுறிகளை கட்டுப்படுத்துகிறது என்பதை பற்றிய ஒரு ஆய்வை நடத்துகிறேன்." இதன் தொடர்பாக நான் தங்களை எனது ஆய்வின் பங்கேற்பாளராக இணைத்துக்கொள்ள மிக தாழ்மையுடன் கேட்டுக் கொள்கிறேன். இதன் தொடர்பாக நான் கேட்கும் கேள்விகளுக்கு சரியான உங்கள் பதிலை தெரிவிக்கவும். உங்கள் பதிலை நான் என் ஆய்விற்காக மட்டுமே பயன் படுத்துவேன் என்று உறுதியளிக்கிறேன்.

நன்றி

DEMOGRAPHIC VARIABLES

1) Age in years
   a) 11 to 12 yrs
   b) 13 to 14 yrs
   c) 15 to 16 yrs

2) Age at menarche
   a) 11 to 12 yrs
   b) 13 to14 yrs
   c) 15 to 16 yrs

3) Weight in kilogram
   a) 31 to 40 kg
   b) 41 to 50 kg
   c) 51 to 60 kg

4) Body mass index
   a) <19
   b) 20 to 25
   c) >30

5) Type of diet
   a) Vegetarian
   b) Non-vegetarian
   c) Mixed

MODIFIED PREMENSTRUAL TENSION SYNDROME SCALE

S.NO.	ITEMS	MILD	MODERATE	SEVERE
1.	**PHYSICAL SYMPTOMS** a) Vomiting b) Abdominal pain c) Breast tenderness d) Swelling of extremities e) Cravings for sweet foods f) Cravings for salty foods g) Cravings for other types of food			
2.	**PSYCHOLOGICAL SYMPTOMS** a) Difficulty sleeping b) Tense feelings c) Irritability d) Mood swings e) Feelings that are easy upset f) Poor concentration of memory g) Feelings of low set worth			

SCORING KEY:

< 14%	-	MILD
14 -28%	-	MODERATE
29-52%	-	SEVERE

மக்கள் தொகை மாறிகள்

1. ஆண்டுகளில் வயது

அ) 11 முதல் 12 ஆண்டுகள்
ஆ) 13 முதல் 14 ஆண்டுகள்
இ) 15 முதல் 16 ஆண்டுகள்

2. பூப்பூ வயது

அ) 11 முதல் 12 ஆண்டுகள்
ஆ)13 முதல் 14 ஆண்டுகள்
இ) 15 முதல் 16 ஆண்டுகள்

3. கிலோகிராம் எடை

அ) 31 முதல் 40 கிலோ
ஆ) 41 முதல் 50 கிலோ
இ) 51 முதல் 60 கிலோ

4. உடல் நிலை சுட்டெண்

அ) பத்தொன்பதைவிட குறைவான
ஆ) 20 முதல் 25 வரை
இ) 30–க்கும் அதிகமான

5. உணவு வகை

அ) புலால் உண்ணாதவர்
ஆ) சைவம் அல்லாத
இ) கலப்பு உணவு

செய்தது மாதவிலக்கு முன் பதற்று நோய்க்குறி அளவு

வ. எண்	உருப்படிகள்	லேசான	மிதமான	கடுமையான
1.	உடல் அறிகுறிகள் அ) வாந்தி ஆ) வயிற்று வலி இ) மார்பக மென்மை ஈ) முனைப்புள்ளிகள் வீக்கம் உ) இனிப்பு உணவுகள் பசி ஊ) உப்பு உணவுகள் பசி எ) உணவு மற்ற வகையான தாக்கம்			
2.	உளவியல் அறிகுறிகள் அ) தூங்கி சிரமம் ஆ) பதட்டமான உணர்வுகள் இ) எளிதில் சீற்றம் கொள்கிற பண்பு ஈ) மனநிலை ஊசலாட்டம் உ) எளிதில் சோகமாய் இருக்கிறாய் என்ற உணர்வு ஊ) நினைவகம் ஏழைசெறிவு எ) குறைந்த சுயமதிப்பு உணர்வுகள்			

மதிப்பீடு:

14% – லேசான
15% ற்ர் 28 % – மிதமான
29% ற்ர் 42 % – கடுமையான

VEL R.S. Medical College
(College of Nursing)

Owned by R.S. Trust
(Approved by Govt. of Tamil Nadu,
Indian Nursing Council, New Delhi, Tamil Nadu Nurses & Midwives Council &
Affliated to The Tamil Nadu Dr. M.G.R. Medical University)
No. 42, Avadi - Alamathi Road,
Vellanur (Post), Avadi, Chennai - 600 062
Phone : 044 - 26840605, E-mail : vrsmc_con@yahoo.com

Administrative Office:
"Santi Sudha", # 38 (Old No. 24),
ABM Avenue, (Opp. Park Sheraton Hotel),
Chennai - 600 028. India.
Phone off : 24355648, 24334845, 24335828
Residence : 24344708
Fax : 24340386, 24357591
Grams : VELGROUP CHENNAI - 28
E-mail : veltech@md3.vsnl.net.in
Website : WWW.vel-tech.org
Phone : 26841093 Fax : 26841601

TO

28/12/2010

Sub: Seeking permission for conducting main study-reg.

Respected Sir/ Madam,

This is to introduce Ms. Leelavathy, Master Degree Nursing student of this college. She has selected the following topic for the Research study to be submitted to the T.N Dr. M.G.R Medical University as partial fulfillment of the master degree in nursing program.

The topic for the study is "Effectiveness of papaya on premenstrual tension syndrome among adolescent girls in a selected setting."

She is interested in conducting Main Study & Pilot study at your estimated institution.

I assure you that our student will abide by the rules and regulations of the Institution. I request you're at most help in regard to the same.

Thanking you,

Place:
Date

தலைமை ஆசிரியர்
அரசு மகளிர் மேல்நிலைப்பள்ளி
அரக்கோணம்-631003

Prof.Mrs.M.Anuradha
PRINCIPAL
VEL R. S, MEDICAL COLLEGE
(COLLEGE OF NURSING)
42, AVADI-ALAMATHI ROAD
VELLANUR, CHENNAI-6

VEL R.S. Medical College

(College of Nursing)

Owned by R.S. Trust

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Thanking you,

Place:
Date

29/6/11

HEAD MASTER
GOVT. HR. SEC. SCHOOL
PALLAVARAM-VELLORE-DT.

Prof.Mrs.M.Anuradha

PRINCIPAL
VEL R. S. MEDICAL COLLEGE
(COLLEGE OF NURSING)
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VELLANUR, CHENNAI-62

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E-mail : veltech@vsni.com
Website : www.vel-tech.org
www.velrsnursing.com
Phone : 26376869 Fax : 26841601

02/05/11

To
The Headmistress,
Mpl. Mid. School,
Gandhinagar, Arakkonam

Sub: Seeking permission for conducting main study –reg.,

Respected Sir/Madam,

This is to introduce Ms.R.Leelavathy, Master Degree Nursing student of this college. She has selected the following topic for the Research study to be submitted to the TN.Dr.M.G.R Medical University as partial fulfillment of the master degree in nursing program.

The topic for the study is "Effectiveness of papaya on premenstrual tension syndrome among adolescent girls in a selected setting".

She is interested in conducting Main Study & pilot study at your estimated institution.

I assure you that our student will abide by the rules and regulations of the Institution. I request you're at most help in regard to the same.

Thanking you,

Place: Chennai

Date 02.05.11.

Prof.Mrs.M.Anuradha
PRINCIPAL
VEL R.S. MEDICAL COLLEGE
(COLLEGE OF NURSING)
42, AVADI-ALAMATHI ROAD
VELLANUR CHENNAI-62

permitted to participate

20/06/2011

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Arakkonam, Vellore Dt.

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work **"A study to assess the effectiveness of papaya fruit on premenstrual tension syndrome among adolescent girls in Government girls higher secondary school, Arakkonam, 2011 -2012"** done by **Miss.R.Leelavathy,** II year, M.Sc.(Nursing) student of Vel R.S. Medical College - College of Nursing, Chennai is edited for English language appropriateness by **Mr.S.Muthuvappa, M.Com., M.Ed.**

Date: 11.01.2012.

11/01/12
S.MUTHUVAPPA. M.Com., M.Ed,
Signature:
HEADMASTER
MUNICIPAL PRIMARY SCHOOL
GRIBLESPET. ARAKKONAM

CERTIFICATE OF TAMIL EDITING

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This is to certify that the Tamil version of pamphlet used for the dissertation work **"A study to assess the effectiveness of papaya fruit on premenstrual tension syndrome among adolescent girls in Government girls higher secondary school, Arakkonam, 2011 -2012"** done by **Miss.R.Leelavathy,** II year, M.Sc (Nursing) student of Vel R.S. Medical College - College of Nursing, Chennai is edited for Tamil language appropriateness by **Mrs.V.Arputham, M.A., M.Ed.**

Date: 11.01.12.

Signature:

தலைமை ஆசிரியை
அரசு மேல்நிலைப்பள்ளி
காந்தி நகர்,
அரக்கோணம்-631 001.

PREMENSTRUAL TENSION SYNDROME

It refers to the group of symptoms experienced by adolescent girls prior to menstruation which is characterized by sharp or dull pain due to the contraction of abdominal muscles along with fatigue, breast tenderness, nausea, and vomiting, physical, psychological and behavioral changes.

The most common symptoms are listed below.

Psychological

- Irritability.
- Mood swings.
- Losing your temper easily.
- Loss of confidence.
- Crying for no particular reason.
- Aggression.
- Poor concentration.
- Tiredness.

Physical

- Breast tenderness.
- Abdominal swelling or bloating.
- Weight gain.
- Swollen ankles.
- Headache and possibly migraine.

PAPAYA FRUIT

- Papaya, paw paw, papaw, tree melon (Botanical name- Carica papaya), it has oblong shape, normally greenish yellow, yellow or orange colour.
- It is large tree plant fruit usually reaching 2.5 kg. It has bitter sweet taste .It comes from tropical places with higher humidity, native to Mexico ,countries of central America, Thailand ,Africa, Asia and growing well in Australia.
- Papaya fruit is an excellent source of dietary fibre, folate, vitamin A, C and E.
- Papaya fruit is an excellent source of dietary fibre, folate, vitamin A, C and E.
- It also contains small amount of calcium, iron, riboflavin, thiamine and niacin.
- It is also very rich in antioxidant nutrients flavanoids and carotenes, very high in vitamin C &A and low in calories& sodium.
- Eating pawpaw after a meal makes for better digestion prevents bloating and chronic indigestion. It can lower the inflammation in the body, alleviates the pain and edema caused by sports injuries.
- Because of its anti inflammatory properties papaya can relieve the severity of Rheumatoid arthritis and Osteoarthritis.
- Because of its high antioxidant content, papaya can prevent cholesterol oxidation and can be used in preventive treatments against atherosclerosis, strokes, heart attacks and diabetic heart disease

HEALTH BENEFITS OF PAPAYA FRUIT

1.Rich in vitamin C, beta carotene and magnesium.

2. It promotes direct absorption.

3. Good for all age group.

5. Daily requirement of beta carotene for children is 2400 kcal. But in papaya 666 kcal present.1/4th is getting.

6. Vitamin C-40 mg (144 percent), more than 44 percent is present.

7. It is essential for iron absorption because it converts ferric iron to ferrous iron.

8. Seasonal food

9. Reduces cholesterol

10. Prevents constipation

NUTRITIONAL BENEFITS OF PAPAYA FRUIT

1. Energy- 32 kcal

2. Carbohydrate-7.2 gm

3. Protein – 0.6 gm

4. Fat- 0.1 gm

5. Betacarotene-666 microgram

8. Minerals:

i) Calcium-17 mg

ii) Phosphorus-13 mg

iii) Magnesium-11mg

iv) sodium-6 mg

v) potassium-69 mg

vi) sulphur-13 mg

vii) chloride-11 mg

viii) iron-0.5 mg

9. Vitamins:

i) Thiamine-0.04 mg

ii) Riboflavin-0.25 mg

iii) Niacin-0.2 mg

iv) Vitamin C-57 mg

10. oxalic acid-1 mg

11. Protein constituents

a) Total nitrogen-g/100g=0.1

12. Fibre

a)Total dietary fibre-2.6 gm

ADVICE TO ADOLESCENT GIRLS

Advice to take 75 mg of papaya fruit for 21 days from the first day of last menstrual period in mid morning in order to reduce the level of premenstrual tension syndrome.

IMPORTANCE OF PAPAYA FRUIT